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DEPARTMENT OF COMMERCE
U. S. BUREAU OF FISHERIES
HUGH M. SMITH, Commissioner

COMMERCIAL FISHERIES OF THE UNITED STATES AND THE OPERATIONS OF THE BUREAU OF FISHERIES IN CONNECTION THEREWITH DURING FISCAL YEAR ENDED JUNE 30, 1916

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[Extracted from the Report of the Commissioner of Fisheries to the Secretary of Commerce for the fiscal year ended June 30, 1916, pages 50-100]

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COMMERCIAL FISHERIES.

Investigations completed by the Bureau during the year, in addition to the work of local agents in collecting data for important mussel fisheries on the Atlantic and Pacific coasts, included canvasses of the fresh-water mussel fishery of the Mississippi River and its western tributaries from Kansas northward; the fisheries of Lakes Pepin and Cooper in the Mississippi River, the former between Minnesota and Wisconsin, and the latter at Keokuk, Iowa; the crab industry of Maryland and Virginia; the shad and alewife industry of Chesapeake Bay and tributaries; the coastal fisheries of New York and New Jersey, exclusive of shellfish, for 1915; and the shad fishery of the Hudson River for 1915 and 1916. The inquiries relating to the fresh-water mussel fishery in the region referred to, and those relating to the shad and alewife industry, were begun the latter part of the preceding fiscal year.

FRESH-WATER MUSSEL FISHERY.

The general canvass of the fresh-water mussel fishery, which has been in progress for several years, was completed during the past year. The streams covered were the Mississippi River and its western tributaries from Kansas northward, except the Neosho River in Kansas, which was included in the work of a previous year; and the data collected were for the calendar year 1914. A special bulletin giving the results of the canvass was issued and distributed. The number of persons engaged in the mussel fishery in these streams in 1914 was 1,873, and the investment in boats, fishing apparatus, and shore and accessory property amounted to $132,267. The products included 8,539 tons of shells, valued at $148,960, and pearls found in the mussels to the value of $62,902, a total of $211,862. All the shells were used in the manufacture of pearl buttons. The principal fishing apparatus used in taking mussels is the crowfoot bar, the catch with this appliance in this region amounting to 6,524 tons of shells, valued at $120,859. The remainder of the catch was taken with forks, rakes, diggers, tongs, scoops, or basket rakes, and by hand while wading.

Mississippi River.—The most important of these streams is the Mississippi River, the products of which amounted to 6,626 tons of shells, valued at $125,948, and $50,562 worth of pearls, a total of $176,510 in value. This shows a decline of about 58 per cent in quantity and 61 per cent in value of the output of shells and pearls since 1903, the last previous year for which data are available. In view of the fact that the mussel fishery has been prosecuted in the Mississippi River for nearly 25 years, the decline in the output is not so surprising. Nearly 94 per cent of the river's catch in 1914 was taken with crowfoot bars, and of the remainder 2 per cent were taken with forks, 2 per cent with rakes, and 2 per cent with diggers and tongs. Fishing with crowfoot bars is more vigorously prosecuted in Lake Pepin than in any other portion of the river. In many cases two rowboats or scows are connected by a bar or pole 10 to 15 feet long, a gasoline boat pushing against the middle of the bar

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being used as the propelling power. The two small boats are provided with 4 crowfoot bars, 3 of which are being fished while the fourth is having the mussels removed from it. Usually two men, but occasionally only one man, handle such an outfit.

Mussel fishing on this river in 1914 was followed from Pine Bend, about 20 miles below St. Paul, Minn., to the mouth of the Missouri River, near Alton, Ill., the fishing ending abruptly at that point. A few shells have been taken as far up the river as Bemidji, Minn., but no sale of them has ever been made. Probably the most productive portion of the river in 1914 was in the vicinity of Frontenac, Minn., where, within a few miles, the 45 men engaged caught 645 tons of shells, valued at $10,570, and $2,100 worth of pearls and slugs. The beds near Maiden Rock, Wis., were also quite profitable, the output of 36 men amounting to 390 tons, valued at $6,630, and $2,100 worth of pearls. Lake Pepin as a whole produced 1,932 tons of shells, valued at $31,486, and $11,820 worth of pearls. It is said that there were at least 1,000 men fishing for mussels in Lake Pepin in 1911, the catch amounting to about 4,000 tons, compared with an output of less than 2,000 tons in 1914 taken by 281 fishermen.

In 1900, when the first mussel fishing was done at Red Wing, Minn., there were said to have been 75 boats at work on the beds there, compared with 8 boats in 1914. The first mussel fishing at New Albin, Iowa, was in 1899, when there were at least 20 men working on the beds, which yielded an average day's catch per man of several thousand pounds, compared with 150 to 200 pounds now. In the early days of the fishery very few shells other than niggerheads were saved. As recently as 1910 as many as 70 or 80 men worked on the mussel beds opposite New Boston, Ill., while in 1914 only 15 men were engaged and small catches were made. There were 15 or 18 mussel fishermen out of Quincy, Ill., in 1900, while in 1915 there were none, this being due both to overfishing and to the building of dams and dikes by the Government to preserve the channel of the river. Similar changes have taken place at Canton, Mo., where a button factory is located, but the shell supply is obtained from various parts of the Mississippi Valley. The mussel beds in the vicinity of Prairie du Chien a few years ago were the most prolific by far of any in the entire river, but in 1914 the catch of 100 men in that vicinity amounted to only 385 tons, valued at $6,872, and $5,500 worth of pearls and slugs.

A great decline has taken place also in the beds near Muscatine, Iowa, where the industry was first established in 1891. The near exhaustion of the beds in this vicinity has caused many of the local fishermen to seek unworked mussel streams in various parts of the country.

The catch of the Mississippi River as a whole was divided among the different species approximately as follows: Niggerheads, 25 per cent; three-ridges (including blue-points), 23 per cent; wartybacks, 13 per cent; muckets, 13 per cent; pig-toes, 6 per cent; washboards, 6 per cent; pocketbooks, 3 per cent; yellow sand-shells, 2 per cent; Missouri niggerheads, 2 per cent; pistol-grips, 2 per cent; and monkey-faces, 1 per cent. The remaining 4 per cent consist of black sand-shells, ladyfingers, bullheads, and a few other unimportant species.

Cedar River.—The catch of this river was apportioned among the different forms of apparatus as follows: 54 per cent with forks, 22 per cent with hands while wading, 18 per cent with crowfoot bars, and the remainder with rakes. Muckets predominated in the catch, with a percentage of 57. The remainder was divided as follows: Three-ridges and blue-points, 18 per cent; pocketbooks, 10 per cent; warty-backs, 3 per cent; pigtoes, 1 per cent; and a few each of pistol-grips, black sand-shells, butterflies, maple-leaves, and other unimportant species.

A few pearls and slugs were taken from this river as far up as Osage, Iowa, in 1914, but Charles City, Iowa, and vicinity was the upper limit of shell fishing. The most productive beds were in the vicinity of Cedar Rapids. This was also the lowest point on the river where shells were taken. The catch of 15 men in that locality amounted to 130 tons, valued at $2,020, and $975 worth of pearls and slugs.

The first mussel shells were taken for market from this river in 1905 near Vinton, where a button factory was established about that time and operated for several years.

Des Moines River.—More than 75 per cent of the river's output is taken between Ottumwa, Iowa, and about 15 miles below that city. Forty-five tons of shells were taken from the east fork of the river as far north as between Bert and Bancroft, this being the first year in which work was done on that branch of the river. The lowest point at which shells were taken was near Keosauqua, Iowa, an output of 17 tons being shown for that vicinity. The prevailing species were three-ridges (including blue-points), warty-backs, muckets, and pigtoes, with percentages of 45, 18, 15, and 13, respectively. The remainder was made up of pistol-grips, maple-leaves, monkey-faces, lady-fingers, pocketbooks, etc. About 63 per cent of the catch was made with forks, 29 per cent with hands while wading, and the remainder with rakes. The first record of any shells being taken from this river was near Keosauqua in 1910.

James River.—This river, said to be the longest unnavigable river in the United States, supported mussel fisheries from Riverside, S. Dak., to within a few miles of its mouth—Yankton, S. Dak. The most prolific beds were between Milltown and Olivet, S. Dak., and those located a few miles above and below Yankton. The total output of the river in 1914 amounted to 260 tons, valued at $3,498, and $700 worth of pearls and slugs. Twenty-seven persons were engaged in the fishery and had an investment of $1,460, including apparatus, boats, and shore property. About 90 per cent of the catch was taken with scoops, or basket rakes, and the remainder with forks and by hand. The output was composed of 85 per cent three-ridges (including blue-points), 10 per cent fat muckets, and the remainder maple-leaves, pocketbooks, and heel-splitters. The first record of any mussel fishing being done in the James River was in 1912. Pearls, however, were taken several years previously.

Osage and Marais des Cygnes Rivers.—The Osage and Marais des Cygnes Rivers are treated as one, the latter being the name given to that portion of the river flowing through Kansas. Forty men, with an investment of $1,261, were engaged in shelling on this river from near Trading Post, Kans., as far down as Warsaw, Mo. The total output in 1914 amounted to 204 tons of shells, with a value of $2,111, and $380 worth of pearls. About 37 per cent of the catch was made with forks, 26 per cent with hands while wading, 22 per cent with crowfoot bars, and the remainder with diggers and tongs. The output was apportioned among the different species as follows: Three-ridges (including blue-points), 43 per cent; washboards, 17 per cent; pig-toes, 15 per cent; muckets, 12 per cent; and a few each of warty-backs, monkey-faces, lady-fingers, pistol-grips, maple-leaves, and butterflies. The most prolific beds were those between Warsaw and 55 miles above that town, 22 men working on these beds obtaining 110 tons, with a value of $1,540, and $100 worth of pearls.

Wapsipinicon River.—Mussel fishing on this river in 1914 extended from Independence as far down as Anamosa, Iowa. The total output was 132 tons, valued at $1,797, together with $765 worth of pearls and slugs. The 37 persons engaged had an investment, in apparatus, boats, and shore property, of $811. More than 50 per cent of the catch was made with forks, the remainder being taken by hand while wading, and with crowfoot bars, and rakes. The catch was divided among the different species as follows: 71 per cent muckets, 15 per cent blue-points and three-ridges, 10 per cent pocketbooks, and the remainder warty-backs, squaw-foots, pig-toes, and heel-splitters. The first mussel fishing on this river of which there is any record was in 1908.

Iowa River.—The total output of this river in 1914 was 93 tons of shells, valued at $1,038, and $2,975 worth of pearls and slugs. The 86 persons engaged had an investment of $345 in apparatus, $500 in boats, and $300 in shore property. More than one-half of the shells were taken with hands while wading, about 25 per cent with forks, and the remainder with crowfoot bars and rakes. The shells were apportioned among the various species as follows: 42 per cent muckets, 30 per cent pocketbooks, 20 per cent three-ridges (including blue-points), and the remainder divided among warty-backs, squaw-foots, pistol-grips, black sand-shells, maple-leaves, pig-toes, lady-fingers, heel-splitters, and butterflies. Pearls were found as far up the river as Popejoy, but the upper limit of mussel fishing was near Eldora, from which place it was followed at intervals as far down the river as North Liberty. The first mussels for commercial use were taken from this river in 1908.

Minnesota River.—Mussels were taken at intervals along this river in 1914 from Montevideo, Minn., to within a short distance of its mouth, the total output amounting to 118 tons of shells, valued at $1,254, and $455 worth of pearls. The 13 men engaged had $120 invested in apparatus, $280 in boats, and $145 in shore property. The most important catch was made in the vicinity of New Ulm, Minn. The entire output of the river was taken with crowfoot bars, and was composed of 56 per cent three-ridges (including blue-points), 27 per cent muckets, 6 per cent washboards, 5 per cent warty-backs, and a few each of niggerheads, pig-toes, and pistol-grips. The first commercial fishing in the Minnesota River was done near its mouth in 1905 by a few fishermen from the Mississippi River, who remained only a short time. Work was followed up more steadily from 1909.

Meramec River.—Mussel shells were taken from the Meramec River in 1914 at various localities between St. Clair and Valley Park, Mo., the total output amounting to 90 tons, valued at $830, and $465 worth of pearls and slugs. The 30 fishermen engaged had an investment of $280 in apparatus, boats, and shore property. Nearly nine-tenths of the mussels were taken by hand and the remainder with crowfoot bars. Muckets composed about 43 per cent, three-ridges

26 per cent, washboards 8 per cent, and warty-backs and pistol-grips, or buckhorns, 7 per cent each of the catch, the balance being made up of pig-toes, niggerheads, maple-leaves, and monkey-faces. The first commercial fishing on this river was in 1910.

Blue River.—Some mussel fishing was done on this river near Beatrice, Nebr., in 1914, a total catch of 55 tons of shells, valued at $770, being reported.

South Skunk River.—The 5 fishermen on this river caught 43 tons of mussel shells, valued at $602, and $310 worth of pearls and slugs from the South Skunk River near Oskaloosa, Iowa, in 1914. Some shells were taken from the Skunk River proper in 1913, but none in 1914.

Shell Rock River.—Mussels were taken from this river between Marble Rock and Shell Rock, Iowa, the total output, however, being only 32 tons, valued at $354, and $210 worth of pearls and slugs. Only 6 men were engaged on the entire stream in 1914. One-half of the catch was made with forks, and the remainder with hands, crowfoot bars, and rakes. The different species were found in the following proportions: Pocketbooks, 47 per cent; muckets, 43 per cent; blue-points, or three-ridges, 8 per cent; and a few squaw-foots. No shelling was done on the river previous to 1908.

Cottonwood and Bourbeuse Rivers.—The two remaining streams in the region canvassed were the Cottonwood and Bourbeuse Rivers. Shells were taken on the former river at Cottonwood Falls, Kans., and on the latter near St. Clair, Mo., the combined catch of the two rivers amounting to 65 tons, valued at $430, and $60 worth of pearls and slugs.

Statistics of the mussel fishery.—Complete statistics for all of the mussel-bearing streams of the Mississippi Valley show a total of 10,331 persons engaged in the fishery, an investment of $540,608, and a catch of 51,571 tons of shells, valued at $825,776, together with $376,284 worth of pearls and slugs; the total value of the products amounting to $1,202,060. Statistics of the mussel fishery of the Mississippi River and its western tributaries from Kansas northward for 1914, and of the entire Mississippi Valley in three sections for 1912, 1913, and 1914, respectively, are given in the following tables:

FRESH-WATER MUSSEL FISHERY OF THE MISSISSIPPI RIVER AND ITS WESTERN TRIBUTARIES FROM KANSAS NORTHWARD IN 1914.[a]

Items.	Blue River, Nebr., and Cottonwood River, Kans.		Cedar River, Iowa.		Des Moines River, Iowa.		Iowa River, Iowa.		James River, S. Dak.		Meramec and Bourbeuse Rivers, Mo.	
	No.	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*
Persons engaged:												
Fishermen	7		80		31		86		27		32	
Shoresmen			10									
Total	7		90		31		86		27		32	
Fishermen, classified by methods used:												
Crowfoot bars			25				20				4	
Forks			77		31		85		2			
Rakes			6		3		40					
Diggers or dredgers												
Tongs												
Scoops, or basket rakes									25			
Waders	7		60		30		86		2		32	
Total, exclusive of duplication	7		80		31		86		27		32	
Boats:												
Rowboats	7	$55	74	$660	31	$295	82	$500	13	$245	28	$130
Gasoline boats			3	265					9	995		
House-boats												
Total	7	55	77	925	31	295	82	500	22	1,240	28	130
Apparatus:												
Crowfoot bars ....pairs			25	365			20	200			2	20
Forks			77	103	31	44	85	115	2	3		
Rakes			6	6	3	2	40	30				
Diggers or dredgers												
Tongs												
Scoops, or basket rakes									15	67		
Total				474		46		345		70		20
Shore and accessory property		10		565		375		300		220		150
Total investment		65		1,964		716		1,145		1,530		300
Products:												
Shells—												
With crowfoot bars..tons			87	994			10	110			10	90
With forks............do			261	3,316	211	2,777	23	256	20	240		
With rakes............do			20	285	25	325	10	110				
With diggers or dredgers, tons												
With tongs...........tons												
With scoops, or basket rakes..............tons									232	3,162		
With hands...........do	110	1,120	117	1,331	100	1,300	50	562	8	96	90	820
Total	110	1,120	485	5,926	336	4,402	93	1,038	260	3,498	100	910
Pearls		100		3,665		2,305		2,975		700		475
Total value of products		1,220		9,591		6,707		4,013		4,198		1,385

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[a] Not including the Neosho River, shown in another table.

FRESH-WATER MUSSEL FISHERY OF THE MISSISSIPPI RIVER AND ITS WESTERN TRIBUTARIES FROM KANSAS NORTHWARD IN 1914[a]—Continued.

Items.	Minnesota River, Minn.		Mississippi River.		Osage and Marais des Cygnes Rivers, Mo. and Kans.		Shell Rock and South Skunk Rivers, Iowa.		Wapsipinicon River, Iowa.		Total.	
Persons engaged:	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*
Fishermen	13	....	1,383	....	39	....	11	....	35	....	1,744	....
Shoresmen	....	....	115	....	1	....	1	....	2	....	129	....
Total	13	....	1,498	....	40	....	12	....	37	....	1,873	....
Fishermen, classified by methods used:												
Crowfoot bars	13	....	1,364	....	8	....	3	....	15	....	1,452	....
Forks	....	....	48	....	25	....	10	....	35	....	313	....
Rakes	....	....	33	....	....	....	5	....	2	....	89	....
Diggers or dredgers	....	....	9	....	2	....	....	....	....	....	11	....
Tongs	....	....	14	....	10	....	....	....	....	....	24	....
Scoops, or basket rakes	....	....	....	....	....	....	....	....	....	....	25	....
Waders	....	....	....	....	17	....	5	....	29	....	268	....
Total, exclusive of duplication	13	....	1,383	....	39	....	11	....	35	....	1,744	....
Boats:												
Rowboats	9	$95	734	$12,360	32	$205	10	$80	35	$235	1,055	$14,860
Gasoline boats	3	185	731	72,755	2	650	....	....	1	100	749	74,950
House-boats	....	....	55	6,595	....	....	....	....	....	....	55	6,595
Total	12	280	1,520	91,710	34	855	10	80	36	335	1,859	96,405
Apparatus:												
Crowfoot bars....pairs	10	120	1,405	16,816	8	80	3	39	15	200	1,488	17,840
Forks	....	....	48	103	25	31	10	13	35	44	313	456
Rakes	....	....	23	51	....	....	5	4	2	2	79	95
Diggers or dredgers	....	....	32	164	2	10	....	....	....	....	34	174
Tongs	....	....	14	70	....	....	....	....	....	....	14	70
Scoops, or basket rakes	....	....	....	....	....	....	....	....	....	....	15	67
Total	....	120	....	17,204	....	121	....	56	....	246	....	18,702
Shore and accessory property	....	145	....	14,795	....	285	....	85	....	230	....	17,160
Total investment	....	545	....	123,709	....	1,261	....	221	....	811	....	132,267
Products:												
Shells—												
With crowfoot bars, tons	118	1,254	6,216	117,238	45	630	13	168	25	375	6,524	120,859
With forks......tons	....	....	149	3,308	75	730	41	526	72	985	852	12,138
With rakes.......do	....	....	132	3,049	....	....	11	150	8	100	206	4,019
With diggers or dredgers............tons	....	....	85	1,393	20	280	....	....	....	....	105	1,673
With tongs......do	....	....	44	960	10	140	....	....	....	....	54	1,100
With scoops, or basket rakes..........tons	....	....	....	....	....	....	....	....	....	....	232	3,162
With hands......do	....	....	....	....	54	331	10	112	27	337	566	6,009
Total	118	1,254	6,626	125,948	204	2,111	75	956	132	1,797	8,539	148,960
Pearls	....	455	....	50,562	....	380	....	520	....	765	....	62,902
Total value of products	....	1,709	....	176,510	....	2,491	....	1,476	....	2,562	....	211,862

[a] Not including the Neosho River, shown in another table.

FRESH-WATER MUSSEL FISHERY OF THE MISSISSIPPI VALLEY.

Items.	Streams tributary to Gulf of Mexico from Ohio River southward in 1912.[a]		Streams tributary to Great Lakes and Ohio and Mississippi Rivers north of the Ohio and east of the Mississippi River in 1913.[b]		Mississippi River and its western tributaries from Kansas northward in 1914.[c]		Total.[d]	
	No.	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*
Persons engaged:								
Fishermen	4,665	....	3,337	....	1,744	....	9,746	....
Transporters	91	....	....	....	....	....	91	....
Shoresmen	110	....	255	....	129	....	494	....
Total	[e]4,866	....	[f]3,592	....	[g]1,873	....	10,331	....
Fishermen, classified by methods used:								
Crowfoot bars	2,793	....	2,216	....	1,452	....	6,461	....
Forks	364	....	1,116	....	313	....	1,793	....
Tongs	1,232	....	513	....	24	....	1,769	....
Diggers	....	....	140	....	11	....	151	....
Dredgers	43	....	63	....	....	....	106	....
Rakes	21	....	93	....	89	....	203	....
Scoops, or basket rakes	....	....	....	....	25	....	25	....
Miscellaneous apparatus	....	....	13	....	....	....	13	....
Waders	1,051	....	944	....	268	....	2,263	....
Total, exclusive of duplication	4,665	....	3,337	....	1,744	....	9,746	....
Boats and vessels:								
Rowboats and barges	4,276	$26,631	2,199	$16,712	1,055	$14,860	7,530	$58,203
Gasoline boats	446	59,545	1,031	87,320	749	74,950	2,226	221,815
House-boats	579	46,990	115	14,610	55	6,595	749	68,195
Vessels transporting	25	56,265	....	....	....	....	25	56,265
Total	5,326	189,431	3,345	118,642	1,859	96,405	10,530	404,478
Apparatus:								
Crowfoot bars.......pairs	2,795	31,896	2,212	24,395	1,488	17,840	6,495	74,131
Forks	364	427	1,103	1,441	313	456	1,780	2,324
Tongs	1,245	7,321	513	2,796	14	70	1,772	10,187
Diggers	....	....	102	658	34	174	136	832
Dredges	19	1,500	36	63	....	....	55	1,563
Rakes	21	58	85	119	79	95	185	272
Scoops, or basket rakes	....	....	....	....	15	67	15	67
Miscellaneous apparatus	....	....	....	9	....	....	....	9
Total	....	41,202	....	29,481	....	18,702	....	89,385
Shore and accessory property	....	10,853	....	18,732	....	17,160	....	46,745
Total investment	....	241,486	....	166,855	....	132,267	....	540,608
Products:								
Shells—								
With crowfoot bars.tons	14,531	210,521	15,258	245,477	6,524	120,859	36,313	576,857
With forks.........do	1,277	15,283	3,292	55,757	852	12,138	5,421	83,178
With tongs.........do	3,201	55,568	790	13,559	54	1,100	4,045	70,227
With diggers.......do	....	....	1,733	28,200	105	1,673	1,838	29,873
With dredges.......do	303	5,091	225	4,500	....	....	528	9,591
With rakes.........do	24	379	161	2,856	206	4,019	391	7,254
With scoops, or basket rakes.............tons	....	....	....	....	232	3,162	232	3,162
With miscellaneous apparatus...........tons	....	....	34	453	....	....	34	453
With hands........do	379	7,764	1,824	31,408	566	6,009	2,769	45,181
Total	19,715	294,606	23,317	382,210	8,539	148,960	51,571	825,776
Pearls	....	149,121	....	164,261	....	62,902	....	376,284
Total value of products	....	443,727	....	546,471	....	211,862	....	1,202,060

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[a] From Statistical Bulletin 305. This includes Neosho River, Kans.

[b] From Statistical Bulletin 314. This does not include tributaries of the Ohio River in Ohio, data for which were shown in Statistical Bulletin 305.

[c] From Statistical Bulletin 343. This does not include the Neosho River, Kans., data for which were shown in Statistical Bulletin 305.

[d] Obtained by combining statistics for the three sections of the Mississippi Valley for 1912, 1913, and 1914, respectively.

[e] Includes 56 women.

[f] Includes 253 women.

[g] Includes 118 women.

FISHERIES OF LAKE PEPIN AND LAKE COOPER.

Lake Pepin.—Lake Pepin, an expansion of the Mississippi River between Minnesota and Wisconsin, is nearly 25 miles long and 3 miles wide at its greatest breadth. It supports quite extensive fisheries. Pepin, Wis., is the most important town in the extent of its fisheries along the lake. Maiden Rock, Wis., also supports important fisheries.

In 1914 there were 137 fishermen engaged in the industry, their total investment amounting to $43,599. The investment included 28 gasoline boats, worth $7,625; 53 rowboats, valued at $1,300; 1 houseboat, valued at $100; 295 fyke nets, valued at $24,995; 14 seines, valued at $3,340; 664 anchored gill nets, valued at $4,421; 8 trap nets, with a value of $480; $3 worth of lines, and $1,335 worth of shore and accessory property. The total output of the lake amounted to 758,670 pounds of fish, with a value to the fishermen of $33,719. Buffalofish, German carp, fresh-water drum, and catfish made up 94 per cent of the value of the entire catch. The most important apparatus used was the fyke net, known locally as hoop net. The catch therewith amounted to 337,446 pounds of fish, valued at $18,973. The leading species included in the catch were buffalofish, fresh-water drum, German carp, suckers, and quillbacks, or white carp. Seines ranked next in importance with a catch of 291,216 pounds of fish, having a value of $8,219. German carp and buffalofish were the two leading species taken, the value of the two being more than three-fourths that of the entire seine catch. The catch by anchored gill nets amounted to 126,198 pounds, valued at $6,432. As in the case of seines, the principal species taken were the buffalofish and German carp. Trap nets and lines were also used, but the combined catch of the two amounted to only 3,810 pounds, with a value of $95.

The fishery conditions on Lake Pepin have improved very much within the past 15 years by the opening up of the New York market during the winter season. Previously there was only a local demand for the fish. A considerable portion of the winter fishing is done through the ice. Comparatively few fish are handled during warm weather, as the demand is then very light. There is a close season along the lake in both Minnesota and Wisconsin from April 15 to June 15.

Lake Cooper.—Lake Cooper, which is merely a widening of the Mississippi River formed by back water from the dam at Keokuk, Iowa, has a length of about 50 miles.

There was a total of 105 men engaged in the fisheries of this lake during 1914. These men had an investment of $16,190, and caught 661,135 pounds of fish, valued at $23,300. Buffalofish, German carp, and catfish contributed 94 per cent of the value of the total catch. The most important form of apparatus used was the fyke net, known locally as bait net. The catch by this form of net amounted to 488,005 pounds, valued at $16,210. The remainder of the catch was taken with lines and trammel nets. The most important species taken both in fyke nets and trammel nets were German carp and buffalofish. Catfish and German carp constituted the principal species taken on lines.

The form of fyke net in general use on Lake Cooper is much smaller than those used on Lake Pepin, having neither leader, wings, nor heart, as have most of those on the latter lake. The Lake Cooper fyke nets have from 4 to 7 hoops, 2½ feet in diameter. There was one set in the lake opposite Sandusky, Iowa, in 1914, however, which had 9 hoops, the largest being 11 and the smallest 7 feet in diameter. The total length of this net was 57 feet.

FISHERIES OF LAKE PEPIN AND LAKE COOPER (MISSISSIPPI RIVER) IN 1914.

Items.	Lake Pepin.		Lake Cooper.	
	Number.	*Value.*	*Number.*	*Value.*
Persons engaged:				
Fishermen	135	....	105	....
Shoresmen	2	....	....	....
Total	137	....	105	....
Boats, apparatus, and other property:				
Gasoline boats	28	$7,625	36	$3,870
Rowboats	53	1,300	84	1,250
House-boats	1	100	10	1,075
Fyke nets	295	24,995	1,378	5,693
Seines	14	3,340	....	....
Anchored gill nets	664	4,421	....	....
Trammel nets	....	....	14	304
Trap nets	8	480	....	....
Trot and hand lines	....	3	....	153
Shore and accessory property	....	1,335	....	3,845
Total	....	43,599	....	16,190
Products by apparatus:				
With seines—				
Buffalofish ....pounds..	43,550	2,354	....	....
Catfish ....do....	11,785	738	....	....
Fresh-water drum ....do....	42,150	400	....	....
German carp ....do....	137,920	3,967	....	....
Mooneye, fresh ....do....	3,000	25	....	....
Mooneye, smoked ....do....	365	16	....	....
Quillback, or white carp ....do....	45,775	459	....	....
Spoonbill cat, or paddlefish ....do....	2,205	138	....	....
Sturgeon, lake ....do....	616	73	....	....
Suckers ....do....	3,850	49	....	....
Total	291,216	8,219	....	....
With fyke nets—				
Buffalofish ....pounds..	173,450	14,068	232,585	8,615
Catfish ....do....	10,975	743	18,415	1,258
Crappie ....do....	....	....	50	3
Dogfish ....do....	1,534	16	....	....
Fresh-water drum ....do....	85,000	1,964	21,455	642
German carp ....do....	30,547	1,228	209,715	5,456
Mooneye, fresh ....do....	6,300	63	....	....
Mooneye, smoked ....do....	1,100	54	....	....
Quillback, or white carp ....do....	13,305	378	....	....
Spoonbill cat, or paddlefish ....do....	340	19	....	....
Sturgeon, lake ....do....	405	50	1,095	69
Suckers ....do....	14,490	390	4,640	164
Sunfish ....do....	....	....	50	3
Total	337,446	18,973	488,005	16,210
With anchored gill nets—				
Buffalofish ....pounds..	44,250	3,306	....	....
Catfish ....do....	3,760	244	....	....
Fresh-water drum ....do....	1,235	21	....	....
German carp ....do....	69,050	2,428	....	....
Quillback, or white carp ....do....	1,525	27	....	....
Spoonbill cat, or paddlefish ....do....	6,332	400	....	....
Sturgeon, lake ....do....	46	6	....	....
Total	126,198	6,432	....	....
With trammel nets—				
Black bass ....pounds..	....	....	15	1
Buffalofish ....do....	....	....	15,230	543
Catfish ....do....	....	....	1,055	69
Crappie ....do....	....	....	20	1
Fresh-water drum ....do....	....	....	3,065	108
German carp ....do....	....	....	61,885	1,408
Sturgeon, lake ....do....	....	....	675	40
Total	....	....	81,945	2,170

FISHERIES OF LAKE PEPIN AND LAKE COOPER (MISSISSIPPI RIVER) IN 1914—Con.

Items.	Lake Pepin.		Lake Cooper.	
Products by apparatus—Continued.				
With trap nets—	*Number.*	*Value.*	*Number.*	*Value.*
Catfish .... pounds	235	$15		
Fresh-water drum .... do	3,400	65		
Total	3,635	80		
With trot and hand lines—				
Buffalofish .... pounds			2,085	$94
Catfish .... do	75	5	52,065	3,528
Eels .... do			3,800	250
Fresh-water drum .... do			2,340	77
German carp .... do			30,765	959
Pike .... do	50	5		
Sturgeon, lake .... do			130	12
Sunfish .... do	50	5		
Total	175	15	91,185	4,920
Grand total	758,670	33,719	661,135	23,300
Product by species:				
Black bass .... pounds			15	1
Buffalofish .... do	261,250	19,728	249,900	9,252
Catfish .... do	26,830	1,745	71,535	4,855
Crappie .... do			70	4
Dogfish .... do	1,534	16		
Eels .... do			3,800	250
Fresh-water drum .... do	131,785	2,450	26,860	827
German carp .... do	237,517	7,623	302,365	7,823
Mooneye, fresh .... do	9,300	88		
Mooneye, smoked .... do	1,465	70		
Pike .... do	50	5		
Quillback, or white carp .... do	60,605	864		
Spoonbill cat, or paddlefish .... do	8,877	557		
Sturgeon, lake .... do	1,067	129	1,900	121
Suckers .... do	18,340	439	4,640	164
Sunfish .... do	50	5	50	3
Total	758,670	33,719	661,135	23,300

CRAB INDUSTRY OF MARYLAND AND VIRGINIA.

The blue crab is one of the most valuable fishery resources of Chesapeake Bay. In no other body of water is this species so abundant and important. The increasing magnitude of the fishery has occasioned much concern among those solicitous for its future welfare, and there has been much discussion of the necessity for restrictive measures in Maryland and Virginia. The Bureau desired to give the States full and reliable data on which to base any needed action; and accordingly it placed its agents in the field on November 15, 1915, and on December 21, 1915, was able to issue a printed bulletin containing detailed statistics of the industry for the calendar year 1915. This bulletin, which was very favorably received because of its timely appearance and valuable contents, was distributed to State legislators and fishery officials, to crab fishermen, dealers, and canners, and to all other interested persons.

In Maryland the growth of the hard-crab industry has been quite marked during the past few years, owing to the increasing number of firms engaged in shipping crab meat. The soft-crab fishery has scarcely more than held its own. The crab industry of this State in 1915 gave employment to 7,312 persons, of whom 4,053 were engaged in the shore or boat fisheries, 41 on fishing and transporting vessels, and 3,218 in the wholesale trade and canning industry. The investment in vessels, boats, fishing apparatus, and shore and accessory property was $485,627. The wages paid in the wholesale and canning trades amounted to $191,840. The catch aggregated 90,281,646 crabs in number, or 30,093,882 pounds, valued at $664,651. This includes 22,491,675 pounds of hard crabs, valued at $335,375, and 7,602,207 pounds of soft crabs, valued at $329,276. The hard crabs were taken chiefly with trot lines, and smaller quantities with scrapes and scoop nets. The greater part of the catch of soft crabs was taken with scrapes and scoop nets, and the remainder with trot lines and seines.

Crisfield still remains the center of both soft and hard crab industries, about three-fourths of the entire crab catch of the State being handled and shipped from that place in a live condition or as crab meat. Many soft crabs are also brought here for shipment in the early spring from the western shore of Virginia. In 1915 there were 47 firms in Crisfield and immediate vicinity handling soft crabs only, 17 firms handling hard crabs only, 2 firms handling both soft and hard crabs, and 1 firm which canned soft crabs. Several of the soft-crab firms had branch houses at various localities throughout Somerset and Dorchester Counties, Md., and Accomac County, Va., their products being brought to Crisfield for shipment. Most of the crabs caught on the western shore of Maryland are also brought by gasoline boats to Crisfield for shipment. With the exception of a few shipped by steamer for consumption in Baltimore, practically all of the soft crabs are sent by express from Crisfield.

Somerset County leads all other counties in the production of crabs, the value of its output to the fishermen in 1915 amounting to $365,498, as compared with $130,136 for Dorchester, $106,480 for Talbot, $18,695 for Queen Anne, $14,210 for Anne Arundel, $12,385 for Kent, $4,900 for Calvert, $3,425 for St. Mary, $1,850 for Wicomico, $1,670 for Charles, and $1,000 for Baltimore. The value of the hard-crab industry far exceeds that of the soft-crab industry in all of the above counties except Somerset, where the conditions are reversed. All of the soft crabs except a few used for canning at Crisfield are shipped alive, while most of the hard crabs are utilized in the extraction of the meat, which is packed and shipped in tin buckets. There were only 3 firms in the State canning crabs in 1915, 2 of these handling hard and 1 soft crabs; the combined output of these firms was 179,976 cans, including a few glass jars, having a value of $33,759.

The crab industry of Virginia employed 2,978 persons and $367,150 in invested capital. The catch amounted to 60,748,158 crabs in number, or 20,249,386 pounds, valued at $317,156; of these, 18,765,148 pounds, valued at $242,754, were hard crabs, and the remainder, 1,484,238 pounds, valued at $74,402, were soft crabs. The most important apparatus used for crabs in Virginia is the trot line, which took 14,042,861 pounds, valued at $135,817; dredges are next, with a catch of 4,196,000 pounds, valued at $94,928; the remaining hard crabs were taken by means of scrapes and scoop nets. Scoop nets constitute the most important apparatus used in the soft-crab fishery, the catch with these amounted to 867,797 pounds, valued at $47,362; scrapes are next in importance with 616,441 pounds, valued at $27,040.

Considering the relative importance of this industry by counties, Elizabeth City County ranks first with 5,040,840 pounds, valued at $78,533; Accomac County is next with 4,352,612 pounds, valued at $96,130. The former county has an excess of 688,228 pounds over the latter, but the value is $17,597 less. This is explained by the fact that Accomac County has quite an important soft-crab fishery, while Elizabeth City County has only hard crabs. The third in importance is York County, with 2,204,800 pounds, valued at $27,504; the fourth is Mathews County, with 1,997,760 pounds, valued at $18,221; the fifth is Norfolk County, with 1,959,000 pounds, valued at $21,772; the sixth is Northampton County, with 1,050,264 pounds, valued at $24,587. The remaining counties have less than 1,000,000 pounds each. Accomac County leads in the production of soft crabs, the catch this year being 1,150,996 pounds, valued at $50,645. Northumberland County leads the western-shore counties in the production of soft crabs, the catch amounting to 166,390 pounds, valued at $12,564; Lancaster County, the next in point of importance, shows a catch amounting to 78,720 pounds, valued at $5,928. Great Wicomico River region in the former county and Corrotoman River, a branch of Rappahannock River, in the latter county are regarded as quite productive and remunerative soft-crab waters, rendered more remunerative, probably, because of the fact that the soft crabs appear here earlier than on the eastern shore, in the Tangier Sound region, and the Crisfield dealers send boats over in the early spring for the catch.

Crab fishing usually starts in Northumberland and Lancaster Counties about the 15th or 20th of April, while the soft-crab season about Crisfield does not begin until about the middle of May. The catch, as well as the demand, diminishes about the early part of June, and many of the fishermen then seek other employment, although the Crisfield boats continue the trips practically throughout the season. These boats also call at other points on the western shore to make crab collections. Trot-line fishing is carried on with more or less importance in every county along both the eastern and western shores, but at many points on the latter side the fishermen lack good shipping facilities, the only outlet being to Baltimore by steamer, and crabs thus shipped from some places one morning do not reach their destination until the following morning. Many of the York County fishermen go to the lower part of the bay, where they consider the fishing grounds to be more productive, and sell their catch to Hampton. Some little trot-line fishing is carried on by Princess Anne County fishermen living about Lynnhaven Inlet. They start in Lynnhaven River in early spring, before the crabs begin moving about, and get good prices for their early catch, but when the Hampton fishermen begin fishing the price usually drops, and as the Lynnhaven fishermen are handicapped for want of convenient market they have about all abandoned crab fishing by early June. Hampton is, by far, the most important locality in the State for the crab industry, 33 of the 56 vessels hailing from this region. There are 15 wholesale dealers here, 2 of whom handle canned crab meat. These dealers take practically the entire catch of the dredge boats in addition to the trot-line catch of this (Elizabeth City) and other counties.

Crabs are canned only during the summer months, and the crabs used for this purpose are consequently taken by trot lines. The line fishing begins as soon as the water becomes warm enough to cause the crabs to move from the mud in which they have been bedded for the winter for protection from the cold, usually some time in April or early May, and continues through the summer until the cold forces the crabs to again seek the mud bottom. In some sections, however, the line fishing slackens during the extremely hot summer months, this being especially true of those places where the shipping facilities are not favorable. The dredging season usually opens some time during November, usually about the middle of the month, as soon as the crabs have bedded, and extends throughout the winter until the water warms sufficiently to start the crabs from their winter beds. Dredging is mostly done in the lower part of the bay, and sometimes outside the capes when the sea is not too rough. The entire winter catch is picked and sold as fresh meat. Crab meat weighs 5 pounds to the gallon, and an average of 7 crabs will yield 1 pound of meat.

A table showing the details of the industry in Maryland and Virginia follows. There are given also comparative statistics of the catch for a number of years, beginning with 1880. The output in 1915 was the largest for any year for which data are available, and the value then was 50 per cent more than in 1908, the last previous year for which the Bureau had collected complete returns. The information at hand, however, points to a catch in 1915 much short of that a few years before, and the climax of the fishery seems to have been reached about 1912.

CRAB INDUSTRY OF MARYLAND AND VIRGINIA, 1915.

Items.	Maryland.		Virginia.		Total.	
	Number.	*Value.*	*Number.*	*Value.*	*Number.*	*Value.*
Persons engaged:						
On vessels fishing	33		189		222	
On vessels transporting	8				8	
In shore or boat fisheries	4,053		1,922		5,975	
Shoresmen	3,218		867		4,085	
Total	7,312		2,978		10,290	
Vessels, boats, apparatus, and other property:						
Vessels fishing	16	$5,450	56	$139,100	72	$144,550
Net tonnage	94		497		591	
Vessels transporting	4	4,200			4	4,200
Net tonnage	26				26	
Gasoline boats	1,304	181,475	283	61,160	1,587	242,635
Sail and row boats	3,053	119,245	1,693	28,774	4,746	148,019
Apparatus vessel fisheries:						
Dredges			182	4,511	182	4,511
Scrapes	71	183	18	54	99	237
Apparatus shore fisheries:						
Dredges			30	720	30	720
Scrapes	2,484	7,452	250	710	2,734	8,162
Scoop nets	1,770	874	641	317	2,411	1,191
Trot lines	1,525	8,741	1,139	7,449	2,664	16,190
Seines	29	111			29	111
Shore and accessory property		157,896		124,355		282,251
Total		485,627		367,150		852,777
Products:						
Vessel fisheries—						
With dredges—Hard crabs, pounds			3,596,400	81,246	3,596,400	81,246
With scrapes—						
Hard crabs ... pounds	26,962	577	11,804	265	38,766	842
Soft crabs ... do	85,772	3,875	52,332	2,355	138,104	6,230
Total	112,734	4,452	3,660,536	83,866	3,773,270	88,318

CRAB INDUSTRY OF MARYLAND AND VIRGINIA, 1915—Continued.

Items.	Maryland.		Virginia.		Total.	
	Number.	*Value.*	*Number.*	*Value.*	*Number.*	*Value.*
Products—Continued.						
Shore fisheries—						
With dredges—Hard crabs, pounds			599,600	$13,682	599,600	$13,682
With scrapes—						
Hard crabs……pounds	1,444,435	$25,190	219,086	5,063	1,663,521	30,253
Soft crabs……do	3,601,394	152,626	564,109	24,685	4,165,503	177,311
With scoop nets—						
Hard crabs……do	1,100,422	20,908	295,397	6,681	1,395,819	27,589
Soft crabs……do	3,530,898	157,024	867,797	47,362	4,398,695	204,386
With trot lines—						
Hard crabs……do	19,919,856	288,700	14,042,861	135,817	33,962,717	424,517
Soft crabs……do	364,877	14,266			364,877	14,266
With seines—Soft crabs…do	19,266	1,485			19,266	1,485
Total	29,981,148	660,199	16,588,850	233,290	46,569,998	893,489
Grand total	[a]30,093,882	664,651	[b]20,249,386	317,156	[c]50,343,268	981,807
Wholesale and canning trade:						
Wages		191,840		67,012		258,852
Barrels, boxes, cans, and packing materials used		104,529		38,553		143,082
Crabs canned……cans					478,104	91,465

[a] 90,281,646 in number.
[b] 60,748,158 in number.
[c] 151,029,804 in number.

COMPARATIVE STATISTICS OF THE CRAB PRODUCT OF MARYLAND AND VIRGINIA FOR VARIOUS YEARS FROM 1880 TO 1915.

Year.	Maryland.					
	Crabs, hard.		Crabs, soft.		Total.	
	Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
1880	1,166,667	$46,850	(a)	(a)	1,166,667	$46,850
1887	2,757,638	36,969	1,636,530	$133,788	4,394,168	170,757
1888	2,674,675	37,438	2,208,829	161,331	4,883,504	198,769
1890	2,388,099	31,723	4,056,110	228,690	6,444,209	260,413
1891	2,776,898	37,460	4,828,872	266,256	7,605,770	303,716
1897	5,333,316	39,949	4,115,879	177,637	9,449,195	217,586
1901	9,824,793	85,884	4,303,582	202,563	14,128,375	288,447
1904	12,665,282	168,996	5,732,865	189,851	18,398,147	358,847
1908 [b]	12,786,000	124,000	7,587,000	195,000	20,373,000	319,000
1915	22,491,675	335,375	7,602,207	329,276	30,093,882	664,651

Year.	Virginia.						Grand total.	
	Crabs, hard.		Crabs, soft.		Total.			
	Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
1880	2,139,200	$32,088	(a)	(a)	2,139,200	$32,088	3,305,867	$78,938
1887	626,820	15,479	(a)	(a)	626,820	15,479	5,020,988	186,236
1888	956,843	24,669	(a)	(a)	956,843	24,669	5,840,347	223,438
1890	2,584,794	28,210	440,310	$26,054	3,025,104	54,264	9,469,313	314,677
1891	2,208,071	32,683	585,956	29,379	2,794,027	62,062	10,399,797	365,778
1897	5,331,398	28,331	1,068,116	39,914	6,399,514	68,245	15,848,709	285,831
1901	6,113,277	52,863	1,288,424	65,972	7,401,701	118,835	21,530,076	407,282
1904	10,356,052	179,575	1,910,654	92,909	12,266,706	272,484	30,664,853	631,331
1908 [b]	23,001,000	239,000	2,082,000	87,000	25,083,000	326,000	45,456,000	645,000
1915	18,765,148	242,754	1,484,238	74,402	20,249,386	317,156	50,343,268	981,807

[a] Statistics not available.
[b] The statistics for 1908 are from data published by the Bureau of the Census.

SHAD AND ALEWIFE INDUSTRY OF CHESAPEAKE BAY AND TRIBUTARIES.

In view of the large interests dependent on the perpetuation of the supply of shad and alewives, or river herring, in the Chesapeake Basin, the Bureau in 1915 made a complete canvass of the industries connected with these fishes, for the purpose of being in position to substantiate the often expressed opinion that radical action was demanded of the States in order to prevent commercial extermination. The results of the canvass were promptly published in a statistical bulletin, which was at once sent to the governors and legislators of Maryland and Virginia, accompanied by three large charts showing the actual location of each pound net and gill net set for shad in 1915 on certain sections of the western shore of Virginia. The data thus supplied are thought to have influenced the Virginia Legislature, in its closing hours, to pass an act, effective in 1917, which will have the effect of permitting a larger portion of the run of spawning fish to reach their spawning grounds. This act, if its object is realized, will supplement in an effective way the protection that has heretofore been afforded to the migrating fish by the War Department through the insistence that certain lanes for navigational purposes shall be left in the maze of set nets on the shores of Chesapeake Bay and its major tributaries.

The fishery for alewives is closely connected with that for shad, the same apparatus being used and the seasons being coincident. The canvass therefore included the alewives as well as the shad, and the published bulletin, herein reprinted, gives the statistics of both fisheries.

The catch of shad in Maryland in 1915, compared with that of 1909, the latest previous year for which statistics are available, declined more than 50 per cent in quantity and about 29 per cent in value, and the catch of alewives decreased nearly 47 per cent in quantity and about 15 per cent in value. Chesapeake Bay, in Maryland, showed a decline of about 45 per cent in the shad catch and 31 per cent in the alewife catch. A still larger decrease occurred in some of the more important rivers. In the Susquehanna River, in Maryland and Pennsylvania, there was a decrease of 88 per cent in the shad and 88 per cent in the alewife catch. In the Choptank River and tributaries there was a decrease of 83 per cent in the catch of shad and 84 per cent in that of alewives. In the Potomac River the shad catch decreased 11 per cent and the alewife catch 74 per cent. In the Northeast River, which was the only one of importance which did not show a decided decline in these species, the catch of shad fell off less than 10 per cent and that of alewives increased 47 per cent.

The catch of shad in the Patuxent River in 1915 amounted to 1,118 in number, compared with 7,485 in 1909, 9,577 in 1904, 43,000 in 1901, and 52,354 in 1896, the only years for which statistics are available. The alewife catch fell off from 796,300 in 1909 to 20,400 in 1915.

The Elk River has never been a prolific shad stream, but has always furnished large quantities of alewives. The largest output of shad was in 1904, when 8,850 were taken. The catch of alewives in this river was 6,736,000 in 1909 and 3,608,950 in 1915.

The decreased run of shad and alewives in the Chesapeake Bay basin of Maryland, Delaware, and Pennsylvania in 1915 resulted in a noticeable decline in the amount of all forms of apparatus used for their capture.

In Virginia the catch of shad in 1915, compared with 1909, decreased 1,316,066 pounds, or 21.82 per cent in quantity, but increased $169,674, or 34.74 per cent, in value, and the catch of alewives decreased 11,733,850 pounds, or 42.22 per cent in quantity, and increased $37,575, or 29.26 per cent, in value.

The pound nets fished in Virginia in these waters during the season of 1915, compared with 1909, show a decrease of 31, but the number of gill nets increased from 7,121 in 1909 to 16,793 in 1915. The total catch of shad in Virginia during the year was 1,629,872 in number, or 4,714,134 pounds, valued at $658,010, and that of alewives was 40,135,328 in number, or 16,054,130 pounds, valued at $165,950.

In the Potomac River there were but two seines fished during the season of 1915 for herring and shad—one on the Maryland side at Chapmans Point and the other on the Virginia side at Stony Point. There are very few pound nets along the Maryland side of this river, but quite a number of large traps on the Virginia side off Northumberland County near the mouth. The alewife fisheries of Westmoreland County were quite extensive up to a few years ago, and it was in this county that the canning of the roe originated. Several large packing houses were located in this county as recently as 1909, but now there is but one, and that very small. There are a number of large packing houses in that part of Northumberland County bordering on the Potomac, or rather in Coan River and Yeocomico River, which are tributary to the Potomac. Both alewives and roe are packed in large quantities at these points. Drift gill nets are not fished for shad below Maryland Point, and from this place they are used in various locations up to Jones Point, a short distance below Alexandria. The gill-net catch of 1915 was reported by fishermen as the lightest they had ever taken, and many of them made little more than expenses. Some fishermen of Northumberland County along the Potomac reported the herring and shad catch for 1915 as very gratifying and thought that it was the best they have had for several seasons.

The total number of pound nets fished in Virginia during the year was 2,012, valued at $408,675. Of these, 527, or about 26 per cent, valued at $107,200, were fished by Mathews County fishermen. Elizabeth City County ranks second in the number of pound nets, having 317, valued at $73,900; Accomac County third, with 273 nets, valued at $48,150; followed by Northumberland County with 269, valued at $73,250, and Gloucester County with 204, valued at $33,100.

The catch for 1915 showed a great many more bucks than for the average year, and many of these were smaller than usual. This seemed to be the case on all parts of the bay.

In the James River stake gill nets are the leading form of apparatus used for shad fishing. The only drifting grounds remaining are located quite a distance up the river, and the catch with drift nets was negligible in the 1915 season. During the summer of 1909, when a canvass of the shad fisheries was made on this river, very few stake nets were found above Ferguson's Wharf, now called Rushmere, located in Isle of Wight County about 12 miles above Newport News.

Such nets are now found at various points up as far as Tar Bay, near Coggins Point, within a short distance of the mouth of Appomattox River. The shad run appeared in 1915 about March 15 to 20, though a few stray fish were seen earlier, and the gill-net fishing was practically over by the third or fourth week in May. Gill nets can not be used after the water is warm enough to start the crabs, as these hang in the nets and interfere too much with the handling of them. The run was much lighter than usual, but the greater part of the gill-net catch was roe fish, and the high price received partly made up for the decrease in the catch.

The apparatus used in the Chickahominy River consists entirely of seines and drift gill nets, and the catch includes shad and other species. Pound nets are not permitted in this river.

In the Rappahannock River stake gill nets having $2\frac{3}{4}$-inch mesh are fished during the winter for perch and discontinued when the shad season opens. The shad nets are then used on the same stands, being the same length as the perch nets but of a larger mesh. Herring do not usually figure in the catch of the perch nets, but there was an early run of branch herring in 1915 and some of the nets made fairly good catches. The fishermen received as high as $20 per thousand for these early herring. Some herring are caught also in the small pound nets in this river, and the average price for these was about $10 per thousand.

The number of persons engaged in the shad and alewife industries of Chesapeake Bay and tributaries in 1915 was 8,839, of whom 6,612 were fishermen and 2,227 were employed in shore industries. The investment in boats, fishing apparatus, shore and accessory property, and cash capital amounted to $1,528,824. The products of these fisheries aggregated 2,129,486 shad in number, or 6,225,549 pounds, valued at $857,771, and 71,571,278 alewives in number, or 28,628,510 pounds, valued at $297,899, a total value for both species of $1,155,670. Compared with the returns for 1909, there was a decrease of 258 in the number of pound nets and an increase of 7,968 in the number of gill nets operated. The catch of shad decreased 3,114,219 pounds, but increased $88,322 in value, and the catch of alewives decreased 22,803,590 pounds and increased $13,855 in value.

Statistics by States of the shad and alewife industry of Chesapeake Bay and tributaries in 1915, and also comparative statistics for Maryland and Virginia for various years from 1880 to 1915, and by waters for certain years from 1896 to 1915, are given in detail in the following tables.

SHAD AND ALEWIFE INDUSTRY OF CHESAPEAKE BAY AND TRBUTARIES, 1915.

Items.	Pennsylvania.			Delaware.			Maryland.			Virginia.			Total.		
	Number.	*Pounds.*	*Value.*	*Number.*	*Pounds.*	*Value.*	*Number.*	*Pounds.*	*Value.*	*Number.*	*Pounds.*	*Value.*	*Number.*	*Pounds.*	*Value.*
Persons engaged:															
Fishermen	192			70			2,388			3,962			6,612		
Shoresmen							1,034			1,193			2,227		
Total	192			70			3,422			5,155			8,839		
Boats, apparatus, and other property:															
Gasoline boats							a 559		$147,510	659		$230,080	1,218		$377,590
Sail and row boats	110		$1,360	33		$400	b 555		19,723	1,091		20,355	1,789		41,838
Apparatus—															
Pound nets							1,062		161,920	2,012		408,675	3,074		570,595
Stake gill nets							2,172		6,209	16,267		16,325	18,439		22,534
Drift and anchored gill nets				68		912	1,703		33,293	526		14,333	2,297		48,538
Seines	8		660	2		400	17		7,925	8		3,795	35		12,780
Dip nets	150		300				53		230				203		530
Shore and accessory property									121,622			125,197			246,819
Cash capital									35,000			172,600			207,600
Total			2,320			1,712			533,432			991,360			1,528,824
Products:															
With pound nets—															
Shad							312,182	908,635	118,395	1,347,482	3,782,574	523,670	1,659,664	4,691,209	642,065
Alewives (herring)							23,874,350	9,549,740	105,849	39,653,000	15,861,200	160,762	63,527,350	25,410,940	266,611
With stake gill nets—															
Shad							21,320	70,075	9,612	158,605	534,508	77,599	179,925	604,583	87,211
Alewives (herring)										99,900	39,960	1,998	99,900	39,960	1,998
With drift and anchored gill nets—															
Shad				7,850	25,000	3,590	130,332	422,539	57,251	118,381	380,922	54,479	256,563	828,461	115,320
Alewives (herring)							90,000	36,000	475	250,000	100,000	2,500	340,000	136,000	2,975
With seines—															
Shad	6,100	18,300	2,650	1,100	3,080	429	10,299	32,289	3,394	5,404	16,130	2,262	22,903	69,799	8,735
Alewives (herring)				17,000	6,800	170	7,454,600	2,981,840	25,455	132,428	52,970	690	7,604,028	3,041,610	26,315
With dip nets—shad	3,000	10,500	1,575				7,431	20,997	2,865				10,431	31,497	4,440
Total shad	9,100	28,800	4,225	8,950	28,080	4,019	481,564	1,454,535	191,517	1,629,872	4,714,134	658,010	2,129,486	6,225,549	857,771
Total alewives (herrings)				17,000	6,800	170	c 31,418,950	12,567,580	131,779	40,135,328	16,054,130	165,950	71,571,278	28,628,510	297,899
Grand total			4,225			4,189			323,296			823,960			1,155,670

Wholesale and canning trade:															
Wages									34,195			31,691			65,886
Barrels, boxes, cans, and salt used									32,378			55,969			88,347
Salt alewives (herring), barrels							20,227	4,091,400	103,278	35,958	7,191,600	158,895	56,185	11,283,000	262,173
Corned alewives (herring)							1,624,300	649,720	8,844	7,237,700	2,895,080	45,162	8,862,000	3,544,800	54,006
Canned alewives (herring), cans							27,144	24,093	1,331				27,144	24,093	1,331
Canned alewives (herring) roe, cans							351,888	374,404	34,046	839,160	944,055	83,321	1,191,048	1,318,459	117,367

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[a] Includes one steamer valued at $2,500.

[b] Includes 3 vessels of 24 net tons, valued at $2,450, used as house-boats.

[c] 4,364,950, weighing 1,745,980 pounds, valued at $33,492, were salted, and 30,000, weighing 12,000 pounds, valued at $175, were smoked by the fishermen.

COMPARATIVE STATISTICS OF THE SHAD AND ALEWIFE PRODUCT OF MARYLAND AND VIRGINIA FOR VARIOUS YEARS FROM 1880 TO 1915.[a]

Years.	Maryland.					Virginia.					Grand total.			
	Shad.		Alewives.		Total value.	Shad.		Alewives.		Total value.	Shad.		Alewives.	
	Pounds.	*Value.*	*Pounds.*	*Value.*		*Pounds.*	*Value.*	*Pounds.*	*Value.*		*Pounds.*	*Value.*	*Pounds.*	*Value.*
1880	3,774,426	$140,926	9,203,959	$139,667	$280,593	3,171,953	$134,496	6,925,413	$76,300	$210,796	6,946,379	$275,422	16,129,372	$215,967
1887	4,040,820	146,951	11,062,270	89,273	236,234	3,815,126	172,272	4,401,635	29,585	201,857	7,855,946	319,223	15,463,905	118,858
1888	4,868,435	176,655	11,511,774	110,291	286,946	7,056,473	321,634	6,453,005	40,369	362,003	11,924,908	498,289	17,964,779	150,660
1890	7,127,486	242,909	19,766,994	143,793	386,702	7,266,207	228,897	10,641,698	91,674	320,571	14,393,693	471,806	30,408,692	235,467
1891	6,224,873	211,575	17,418,850	131,245	342,820	6,498,242	207,394	11,013,485	93,905	301,299	12,723,115	418,969	28,432,335	225,150
1896	5,541,499	166,551	17,667,315	126,050	292,601	11,170,519	307,055	12,197,607	63,024	370,079	16,712,018	473,606	29,864,922	189,074
1897	5,799,563	159,365	17,139,459	123,453	282,818	11,529,474	304,448	13,689,510	70,841	375,289	17,329,037	463,813	30,828,969	194,294
1901	3,111,181	120,602	13,747,157	91,308	211,910	6,972,212	366,203	13,913,444	115,424	481,627	10,083,393	486,805	27,660,601	206,732
1904	2,912,249	159,772	14,484,970	137,982	297,754	7,419,899	439,625	14,603,866	90,733	530,358	10,332,148	599,397	29,088,836	228,715
1908 [b]	3,937,000	247,000	28,805,000	157,000	404,000	7,314,000	486,000	37,885,000	171,000	657,000	11,251,000	733,000	66,690,000	328,000
1909	3,252,688	272,869	23,637,320	155,499	428,368	6,030,200	488,336	27,787,980	128,375	616,711	9,282,888	761,205	51,425,300	283,874
1915	1,454,535	191,517	12,567,580	131,779	323,296	4,714,134	658,010	16,054,130	165,950	823,960	6,168,669	849,527	28,621,710	297,729

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[a] The catch of shad and alewives in these States outside of the Chesapeake Bay region is included for some years, but is practically negligible.

[b] The statistics for 1908 in this table are from data published by the Bureau of the Census.

COMPARATIVE STATISTICS OF THE APPARATUS USED IN THE SHAD AND ALEWIFE FISHERIES OF MARYLAND AND VIRGINIA FOR VARIOUS YEARS FROM 1891 TO 1915.

Year.	Maryland.												Virginia.									
	Pound nets.		Gill nets.		Seines.		Fyke nets.		Dip nets.		Traps.		Pound nets.		Gill nets.		Seines.		Fyke nets.		Traps.	
	No.	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*	*No.*	*Value.*
1891	625	$59,510	10,254	$30,650	214	$36,650							708	$133,880	6,287	$34,464	27	$18,510				
1896	901	66,816	6,593	53,996	90	25,816	335	$5,223	128	$625	15	$600	1,156	236,680	10,748	36,947	42	19,005	72	$1,032	22	$805
1901	1,289		5,620		29		31		65		6		2,043		7,121		16		7		18	
1915	1,062	161,920	3,875	39,502	17	7,925			53	230			2,012	408,675	16,793	30,658	8	3,795				

CATCH OF SHAD AND ALEWIVES IN CHESAPEAKE BAY AND ITS SEVERAL TRIBUTARIES FOR CERTAIN YEARS FROM 1896 TO 1915, BY WATERS.

Waters.	Shad.										Alewives.			
	1896		1901		1904		1909		1915		1909		1915	
	Number.	*Value.*	*Number.*	*Value.*	*Number.*	*Value.*	*Number.*	*Value.*	*Number.*	*Value.*	*Number.*	*Value.*	*Number.*	*Value.*
Chesapeake Bay:														
Virginia	1,122,225	$109,749	a 1,052,180	$199,355	a 1,525,137	$330,073	1,117,328	$278,789	1,130,116	$410,756	38,037,440	$68,506	30,475,100	$122,749
Maryland	417,857	47,465	311,360	44,395	473,860	98,095	580,207	149,187	321,378	128,293	26,222,500	66,203	18,083,300	69,125
Total	1,540,082	157,214	1,363,540	243,750	1,998,997	428,168	1,697,535	427,976	1,451,494	569,049	64,259,940	134,709	48,558,400	191,874
James River and tributaries	495,762	51,247	311,231	61,868	265,664	57,463	216,748	73,108	205,835	98,621	563,487	2,479	122,000	610
York River and tributaries	546,548	50,361					132,139	32,788	22,143	10,341	3,259,167	6,829	43,000	172
Mobjack Bay	140,777	13,874					49,657	11,748	7,563	2,865	1,001,015	2,267	116,000	464
Piankatank River							1,050	250			37,000	67		
Rappahannock River	417,789	35,371					94,935	22,486	50,636	21,444	968,800	1,900	687,900	5,554
Potomac River:														
Virginia	450,825	43,084	648,462	104,566	289,500	51,709	172,813	44,500	165,206	65,300	24,601,040	42,854	7,276,428	30,741
Maryland	233,238	20,524	146,000	14,800	83,147	16,343	31,158	9,232	17,196	6,827	4,883,000	10,369	335,000	1,420
Total	684,063	63,608	794,462	119,366	372,647	68,052	203,971	53,732	182,402	72,127	29,484,040	53,223	7,611,428	32,161
Patuxent River	52,354	5,867	43,000	6,941	9,577	2,483	7,485	2,106	1,118	415	796,300	3,192	20,400	149
West River			8,200	1,050	3,750	962								
South River			470	60										
Severn River			27,500	4,259										
Magothy River							22	7			100,000	290		
Patapsco River			1,900	160										
Back River							20	6			62,000	124		
Middle River			235	50							7,500	17		

Gunpowder River			850	177			16	5			57,000	137		
Bush River					866	180	206	82	70	25	442,500	1,327	705,000	1,565
Susquehanna River:														
Maryland	69,488	8,157	67,000	8,874	39,275	8,087	65,717	19,379	6,585	2,359	8,741,500	33,735	1,070,000	3,870
Pennsylvania	70,599	11,996	98,883	23,412	76,521	19,867	60,045	22,224	9,100	4,225	25,000	75		
Total	140,087	20,153	165,883	32,286	115,796	27,954	125,762	41,603	15,685	6,584	8,766,500	33,810	1,070,000	3,870
Northeast River	60,620	6,382	(b)	(b)	(b)	(b)	62,375	14,627	56,247	21,917	3,740,000	9,500	5,504,000	27,105
Elk River	5,244	637	4,000	478	8,850	1,600	1,053	287	1,426	524	6,736,000	11,251	3,608,950	18,194
Sassafras River	1,290	166	2,500	298	8,150	1,592	329	91	386	150	3,527,000	10,285	1,125,000	6,170
Chester River	53,507	7,918	4,475	739	4,215	1,010	5,718	1,711	1,565	574	646,500	1,771	243,000	1,057
St. Michaels River	2,215	123												
Eastern Bay							5,743	1,699	2,755	991	269,500	462	95,000	355
Choptank River and tributaries	338,420	35,810	142,297	20,918	40,267	8,237	108,956	32,725	17,960	7,016	2,072,000	4,771	336,000	1,596
Honga River			1,555	266	718	148								
Fishing Bay	9,790	1,174	6,000	905	10,980	1,801	800	240			4,000	20		
Blackwater River	13,160	1,480	2,125	290	2,088	497	2,800	840			116,000	232		
Transquaking River	13,694	1,287	4,100	553	5,618	899	9,900	2,970			33,000	83		
Nanticoke River:														
Maryland	125,181	11,648	34,985	5,977	31,028	7,308	21,945	6,583	8,740	4,005	105,727	271	3,000	12
Delaware	52,467	5,155	37,097	6,315	22,450	5,321	7,700	2,310	8,950	4,019	30,000	90	17,000	170
Total	177,648	16,803	72,082	12,292	53,478	12,629	29,645	8,893	17,690	8,024	135,727	361	20,000	182
Marshyhope Creek	38,660	3,865	(c)	(c)	(c)	(c)								
Wicomico River	68,015	8,480	34,348	4,500	28,370	5,946	14,475	4,242	2,374	1,092	28,000	216		
Manokin River					16	5								
Pocomoke:														
Virginia			2,137	414	1,550	380	5,600	1,960			55,000	412		
Maryland	29,752	4,304	28,575	4,004	13,995	3,179	24,130	8,445	9,734	3,977	30,000	75		
Total	29,752	4,304	30,712	4,418	15,545	3,559	29,730	10,405	9,734	3,977	85,000	487		
Tangier Sound:														
Virginia	21,257	2,422					49,776	17,317	42,916	16,743	642,000	1,685	1,311,400	5,246
Maryland	1,416	163	800	155	1,090	153	55,272	17,530	32,065	12,578	418,273	1,032	250,300	1,001
Total	22,673	2,585	800	155	1,090	153	105,048	34,847	74,981	29,321	1,060,273	2,717	1,561,700	6,247
Pocomoke Sound:														
Virginia	8,320	947					15,400	5,390	5,157	1,940	305,000	1,376	103,500	414
Maryland	7,149	801	2,900	560	5,360	814	2,500	875	1,965	774	55,000	136	40,000	160
Total	15,469	1,748	2,900	560	5,360	814	17,900	6,265	7,122	2,714	360,000	1,512	143,500	574
Grand total	4,867,619	190,757	3,025,165	516,339	2,952,042	621,152	2,924,018	785,739	2,129,486	857,771	128,618,249	281,039	71,571,278	297,899

[a] Includes all tributaries of Chesapeake Bay except the James, Potomac, and Pocomoke Rivers.

[b] Included with Chesapeake Bay.

[c] Included with Nanticoke River.

NUMBER OF POUND NETS, THE CATCH OF SHAD AND ALEWIVES, AND THE AVERAGE CATCH OF EACH SPECIES PER NET FOR CERTAIN SECTIONS OF CHESAPEAKE BAY AND POTOMAC RIVER, 1915.

Locality.	Number of pound nets.	Number of shad.	Number of alewives.	Average number of shad to net.	Average number of alewives to net.
From Cape Henry to Tue Point (lower side of York River mouth)	496	268,374	1,974,490	541	3,980
From York Spit (inclusive) to Stingray Point	623	491,196	4,437,345	772	7,122
From Rappahannock Spit (inclusive) to Smith Point	276	291,266	21,667,166	1,054	78,504
Potomac River	211	147,271	7,336,000	697	34,760

COASTAL FISHERIES OF NEW YORK AND NEW JERSEY.

Following a conference with the fishery authorities of the States of New York and New Jersey in January, 1916, regarding the condition of the coastal fisheries of those States and the measures necessary for their conservation, the Bureau undertook, by request, the canvass of those fisheries so that their actual extent might be known. The field work was completed in June and the results of the canvass were communicated to those interested. The figures related to the calendar year 1915 and covered only fishes proper.

In New York the number of persons engaged in the coastal fisheries was 2,504, and the investment in vessels, boats, fishing apparatus, and shore and accessory property was $1,771,166. The products amounted to 34,047,775 pounds of fish, valued at $1,121,641. Some of the more important species taken were bluefish, 6,107,113 pounds, valued at $492,928; butterfish, 1,244,475 pounds, valued at $51,636; cod, 1,259,160 pounds, valued at $59,400; eels, 426,330 pounds, valued at $34,387; flounders, 3,440,053 pounds, valued at $96,337; mackerel, 342,489 pounds, valued at $25,620; menhaden, 14,518,812 pounds, valued at $100,935; scup, 1,026,736 pounds, valued at $44,447; sea bass, 973,686 pounds, valued at $44,894; and squeteague, 1,859,143 pounds, valued at $98,324.

In New Jersey there were 2,303 persons employed in the coastal fisheries, and the investment amounted to $1,192,057. The products aggregated 47,856,176 pounds of fish, valued at $1,348,667. The species taken in largest quantities were bluefish, 2,728,779 pounds, valued at $177,906; butterfish, 5,462,917 pounds, valued at $151,677; cod, 679,133 pounds, valued at $31,896; croaker, 2,984,719 pounds, valued at $47,366; eels, 377,698 pounds, valued at $28,257; flounders, 1,531,376 pounds, valued at $58,443; mackerel, 367,307 pounds, valued at $26,161; menhaden, 4,354,789 pounds, valued at $36,602; scup, 3,279,693 pounds, valued at $94,776; sea bass, 6,171,922 pounds, valued at $203,163; squeteague, 14,121,330 pounds, valued at $358,977; and whiting, 2,407,217 pounds, valued at $36,367.

The statistics of these fisheries, by counties, are given in detail in the following table:

STATISTICS OF COASTAL FISHERIES OF NEW YORK AND NEW JERSEY, BY COUNTIES, EXCLUSIVE OF SHELLFISH, 1915.

NEW YORK.

Items.	Kings, New York, Queens, and Richmond Counties.		Nassau County.		Suffolk County.		Total.	
	Number.	*Value.*	*Number.*	*Value.*	*Number.*	*Value.*	*Number.*	*Value.*
Persons engaged	841		119		1,544		2,504	
Vessels fishing	57	$306,395	4	$5,850	84	$763,896	145	$1,076,141
Tonnage	2,576		32		2,371		4,979	
Outfit		145,225		620		49,256		195,101
Vessels transporting					21	52,720	21	52,720
Tonnage					266		266	
Outfit						2,240		2,240
Sail, row, and house boats	11	225	39	890	474	16,160	524	17,275
Gasoline boats	4	2,850	34	14,750	282	112,025	320	129,625
Pound nets	4	2,800			460	114,215	464	117,015
Seines	20	17,900	23	1,173	117	37,010	160	56,083
Gill nets	100	1,100	84	3,375	469	11,670	653	16,145
Fyke nets					5,373	24,152	5,373	24,152
Lines		4,500		635		1,838		6,973
Otter trawls					156	3,815	156	3,815
Eelpots	250	275	390	430	5,055	5,503	5,695	6,208
Other apparatus				2,276		112		2,388
Shore and accessory property		650		1,050		63,585		65,285
Total		481,920		31,049		1,258,197		1,771,166
Products:								
	Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
Albacore and horse mackerel	430	$25			4,450	$129	4,880	$154
Alewives	11,000	140	500	$10	523,605	7,214	535,105	7,364
Bluefish	5,790,205	466,522	27,200	2,690	289,708	23,716	6,107,113	492,928
Bonito	1,054	100	300	30	11,795	1,157	13,149	1,287
Butterfish	60,000	1,800			1,184,475	49,836	1,244,475	51,636
Carp					102,300	7,592	102,300	7,592
Cod	723,375	32,855	201,000	9,550	334,785	16,995	1,259,160	59,400
Croaker	14,949	336			10,000	350	24,949	686
Eel	5,630	532	32,900	3,395	387,800	30,460	426,330	34,387
Flounders	28,123	838	115,000	3,240	3,296,930	92,259	3,440,053	96,337
Haddock	34,041	1,238	2,000	100	49,550	2,573	85,591	3,911
Hake	2,044	63	8,500	200	52,725	1,238	63,269	1,501
Hog choker					7,200	60	7,200	60
Kingfish	89	18			31,005	3,170	31,094	3,188
Mackerel	9,360	968	6,800	630	326,329	24,022	342,489	25,620
Menhaden	2,632,100	19,307	6,000	60	11,880,712	81,568	14,518,812	100,935
Mullet, fresh					5,113	203	5,113	203
Mummichog			8,000	40	138,250	1,023	146,250	1,063
Pike					800	96	800	96
Pollock	16,170	529	30,000	900	35,540	1,465	81,710	2,894
Scup, or porgy	511,476	20,574			515,260	23,873	1,026,736	44,447
Sea bass	270,263	14,398	150,000	2,500	553,423	27,996	973,686	44,894
Sea robins	2,657	29			97,905	1,251	100,562	1,280
Shad	5,250	785			14,705	1,365	19,955	2,150
Sharks	20,975	84			19,225	192	40,200	276
Skates	7,700	77			204,463	1,360	212,163	1,437
Smelt			2,300	350	4,450	1,320	6,750	1,670
Spanish mackerel	529	162	50	10	20	2	599	174
Spot					1,500	60	1,500	60
Squeteague	592,254	22,477	56,950	3,022	1,209,939	72,825	1,859,143	98,324
Squid	1,200	12			556,425	8,306	557,625	8,318
Striped bass			2,200	344	14,700	2,460	16,900	2,804
Sturgeon					3,826	673	3,826	673
Sturgeon caviar					241	248	241	248
Swellfish					50,225	370	50,225	370
Swordfish					7,362	756	7,362	756
Tautog	881	38	100	5	98,100	3,989	99,081	4,032
Tilefish	[a] 183,484	7,748					183,484	7,748
Tomcod					70,157	2,716	70,157	2,716
White bait					28,200	2,220	28,200	2,220
White perch					19,400	2,038	19,400	2,038
Whiting	1,000	10			328,925	3,742	329,925	3,752
Other fish					213	12	213	12
Total	10,926,239	591,665	649,800	27,076	22,471,736	502,900	34,047,775	1,121,641

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[a] Landed by New York vessels and does not include tilefish landed at New York by vessels from other ports.

STATISTICS OF COASTAL FISHERIES OF NEW YORK AND NEW JERSEY, BY COUNTIES, EXCLUSIVE OF SHELLFISH, 1915—Continued.

NEW JERSEY.

Items.	Atlantic County.		Bergen and Hudson Counties.[a]		Cape May County.		Middlesex County.	
	Number.	*Value.*	*Number.*	*Value.*	*Number.*	*Value.*	*Number.*	*Value.*
Persons engaged	298		43		680		54	
Vessels fishing	19	$71,485			25	$74,690		
Tonnage	349				330			
Outfit		25,130				32,725		
Vessels transporting	2	3,500			1	50		
Tonnage	15				10			
Outfit		45						
Sail, row, and house boats	63	1,720	16	$742	38	480	21	$900
Gasoline boats	34	12,250	4	900	130	69,600	8	2,400
Pound nets	3	1,950			58	128,325	1	600
Seines	42	1,722	5	215	21	3,988	10	4,175
Gill nets	45	1,785	10	1,315	192	15,912		
Fyke nets	11	460	26	400	48	2,050	4	200
Bag nets	15	375						
Lines		624		10		3,186		
Eelpots	50	45	4	6	202	325	98	98
Other apparatus				75				
Shore and accessory property		2,420		1,436		38,840		550
Total		123,511		5,099		370,171		8,923
Products:	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
Albacore and horse mackerel	800	$11			10,220	$172		
Alewives	13,862	329	300	$30	29,500	474	7,500	$100
Bluefish	163,664	12,004			874,335	55,620	18,900	915
Bonito	800	48			17,469	857		
Butterfish	49,205	1,041			2,166,453	61,712		
Carp			10,650	1,157			12,500	1,100
Cod	201,000	9,330			261,870	12,842		
Croaker	297,278	6,488			1,063,735	24,515		
Drum	480	5			5,550	63		
Eel	5,875	419	8,025	670	42,885	4,669	1,800	127
Flounders	68,744	2,728			318,044	11,748	4,400	197
Haddock					200	10		
Hake	200	3			1,249	37		
Kingfish	21,068	2,150			17,429	1,925		
Mackerel	152,125	10,860			148,232	10,509		
Menhaden	1,200,000	14,000			101,381	598	112,569	236
Mullet, fresh	5,500	103			34,750	990		
Mullet, salted					500	50		
Pollock					325	4		
Scup, or porgy	840,400	25,109			1,887,117	53,090		
Sea bass	1,522,238	49,280			3,943,624	123,796		
Shad	115	19	20,104	2,674	170	20	1,705	312
Sharks					10,198	143		
Skates	1,200	11			89,180	911		
Smelt							6,000	1,200
Spanish mackerel					270	39		
Spot	4,175	132			13,085	304	2,000	60
Squeteague	1,634,099	42,613			4,331,759	122,331	88,200	3,013
Squid	500	6			289,826	3,617		
Striped bass	7,080	1,384					200	25
Sturgeon					65	4		
Suckers	3,550	226	15,000	1,645				
Tautog	600	12			760	19		
White perch	27,159	2,373			1,575	145	75	6
Whiting					2,000	33		
Yellow perch	165	15			450	22		
Other fish	1,200	83	5,035	495	180	19		
Total	6,226,082	180,782	59,114	6,671	15,664,386	491,288	255,849	7,291

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[a] Includes men, boats, apparatus, and shore property employed and catch of fish taken in Upper New York Bay and Hackensack River, and also men, boats, apparatus, and shore property employed and catch of shad taken in Hudson River.

Statistics of Coastal Fisheries of New York and New Jersey, by Counties, Exclusive of Shellfish, 1915—Continued.

NEW JERSEY—Continued

Items.	Monmouth County.		Ocean and Burlington Counties.		Total.	
	Number.	*Value.*	*Number.*	*Value.*	*Number.*	*Value.*
Persons engaged	582		646		2,303	
Vessels fishing	3	$7,300	1	$1,500	48	$154,975
Tonnage	38		6		723	
Outfit		3,900		80		61,835
Vessels transporting	2	11,000			5	14,550
Tonnage	21				46	
Outfit		1,450				1,495
Sail, row, and house boats	67	1,655	206	10,436	411	15,933
Gasoline boats	179	78,150	154	55,100	509	218,400
Pound nets	65	83,090	47	127,800	174	341,765
Seines	8	2,440	46	2,410	132	14,950
Gill nets	155	8,050	1,359	10,626	1,761	37,688
Fyke nets	103	1,430	778	5,660	970	10,200
Bag nets			75	1,900	90	2,275
Lines		2,327		725		6,872
Otter trawls			1	20	1	20
Eelpots	1,424	1,822	3,461	2,685	5,239	4,981
Other apparatus		7		30		112
Shore and accessory property		118,725		144,035		306,006
Total		321,346		363,007		1,192,057
Products:	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
Albacore and horse mackerel	14,255	$654	44,987	$1,095	70,262	$1,932
Alewives	214,270	2,153	351,865	3,779	617,297	6,865
Bluefish	1,402,898	87,697	268,982	21,670	2,728,779	177,906
Bonito	23,175	1,908	75,878	6,291	117,322	9,104
Butterfish	711,881	22,297	2,535,378	66,627	5,462,917	151,677
Carp					23,150	2,257
Cod	122,908	5,697	93,355	4,027	679,133	31,896
Croaker	288,080	7,178	435,626	9,185	2,084,719	47,366
Drum	8,600	86			14,630	154
Eel	131,238	9,161	187,875	13,211	377,698	28,257
Flounders	373,415	15,297	766,773	28,473	1,531,376	58,443
Goosefish	40,000	125			40,000	125
Haddock					200	10
Hake	727,493	9,305	439,683	4,638	1,168,625	13,933
Hickory shad	3,500	165			3,500	165
Kingfish	5,910	904	13,190	2,188	60,597	7,167
Mackerel	50,175	3,490	16,775	1,302	367,307	26,161
Menhaden	2,765,830	20,142	175,009	1,626	4,354,789	36,602
Mullet, fresh	22,750	910			63,000	2,003
Mullet, salted					500	50
Pollock	3,500	111	8,999	267	12,824	382
Round herring	35,432	717			35,432	717
Scup, or porgy	164,950	5,992	387,226	10,585	3,279,693	94,776
Sea bass	327,800	16,339	378,260	13,748	6,171,922	203,163
Sea robins	35,500	425	41,375	620	76,875	1,045
Shad	12,813	2,183	7,230	1,060	42,137	6.268
Sharks	84,550	748	17,800	175	112,548	1,066
Skates	272,470	1,600	150,716	857	513,566	3,379
Smelt					6,000	1,200
Spanish mackerel	164	34	621	109	1,055	182
Spot	18,950	431	28,450	740	66,660	1,667
Squeteague	3,055,048	86,973	5,012,224	104,017	14,121,330	358,977
Squid	157,370	2,125	525,975	7,082	973,671	12,830
Striped bass	220	44	7,148	1,770	14,648	3,223
Sturgeon	2,788	435	500	50	3,353	489
Sturgeon caviar	270	272			270	272
Suckers			8,700	586	27,250	2,457
Tautog	40,650	1,772	3,000	105	45,010	1,908
Tilefish	30	3			30	3
Toadfish	5,800	80			5,800	80
White bait	750	33			750	33
White perch			136,130	12,881	164,939	15,405
Whiting	1,754,995	26,636	650,222	9,698	2,407,217	36,367
Yellow perch					615	37
Other fish			365	21	6,780	618
Total	12,880,428	334,122	12,770,317	328,513	47,856,176	1,348,667

SHAD FISHERY OF THE HUDSON RIVER.

In connection with the canvass of the coastal fisheries of New York and New Jersey the shad fishery of the Hudson River was covered for the years 1915 and 1916. The statistics are given in the following table, showing for the latter year 119 fishermen, 79 gill nets, 3 seines, and a catch of 9,287 shad, valued at $5,465. The Hudson was at one time one of the great shad streams, its annual output running into the hundreds of thousands. Thus, in 1896 the number of shad taken was 588,898, valued at $83,237. The present condition of the shad fishery is most deplorable.

Shad Fishery of the Hudson River, 1915 and 1916.[a]

1915.

Items.	New York.			New Jersey.			Total.		
	No.	*Lbs.*	*Value.*	*No.*	*Lbs.*	*Value.*	*No.*	*Lbs.*	*Value.*
Fishermen	133			27			160		
Sail and row boats	81		$2,975	7		$430	88		$3,405
Gasoline boats	2		225	2		600	4		825
Gill nets	79		3,984	7		1,035	86		5,019
Seines	2		190				2		190
Shore and accessory property			528			1,230			1,758
Total			7,902			3,295			11,197
Shad caught:									
With gill nets	11,333	47,333	5,834	4,249	20,104	2,674	15,582	67,437	8,508
With seines	62	298	33				62	298	33
With other apparatus incidentally	211	933	102				211	933	102
Total	11,606	48,564	5,969	4,249	20,104	2,674	15,855	68,668	8,643

1916.

Items.	New York.			New Jersey.			Total.		
	No.	*Lbs.*	*Value.*	*No.*	*Lbs.*	*Value.*	*No.*	*Lbs.*	*Value.*
Fishermen	108			11			119		
Sail and row boats	64		$2,240	3		$195	67		$2,435
Gasoline boats	2		225	1		350	3		575
Gill nets	76		2,937	3		480	79		3,417
Seines	3		350				3		350
Shore and accessory property			528			540			1,068
Total			6,280			1,565			7,845
Shad caught:									
With gill nets	7,536	31,670	4,399	1,500	7,250	925	9,036	38,920	5,324
With seines	191	1,008	99				191	1,008	99
With other apparatus incidentally	60	245	42				60	245	42
Total	7,787	32,923	4,540	1,500	7,250	925	9,287	40,173	5,465

[a] Includes Albany, Columbia, Dutchess, Green, Orange, Ronnselaer, Rockland, Schuyler, Ulster, and Weschester Counties in New York, and Bergen and Hudson Counties in New Jersey.

NEW ENGLAND VESSEL FISHERIES.

Statistics of the extensive offshore vessel fisheries centering at Boston and Gloucester, Mass., have been collected during the year by the local agents, and published in monthly and annual bulletins showing, by species and fishing grounds, the quantities and values of the fishery products landed by the American fishing vessels at these ports.

The fleet in 1915 was composed of 410 sail, steam, and gasoline screw vessels. These vessels landed at Boston 3,772 trips, aggregating

97,899,487 pounds of fish, valued at $2,911,314, and at Gloucester 3,472 trips, aggregating 73,696,241 pounds, valued at $1,826,603. The total for the two ports was 7,244 trips, aggregating 171,595,728 pounds of fresh and salted fish, having a value to the fishermen of $4,737,917. Compared with the previous year there was a decrease of 354 trips, but an increased production amounting to 9,006,508 pounds in quantity and $342,887 in value. There was a small decrease in the catch of cod, but an increase in that of practically all the other important species. The value of haddock and cusk was slightly less than that of the previous year. The halibut product increased 491,100 pounds in quantity and $46,946 in value. The mackerel catch increased 6,688,850 pounds, or over 63 per cent, in quantity, and $259,354, or 73 per cent, in value. There was some decrease in the take of Newfoundland herring, but an increase in the value. Swordfish increased 739,123 pounds in quantity and $43,890 in value.

The following tables present in detail (1) by fishing grounds and (2) by months the products of the vessel fisheries of Boston and Gloucester during the calendar year 1915. The weights of fresh and salted fish given in these statistics represent the fish as landed from the vessels, and the values are those received by the fishermen. The grades, or sizes, given for certain species are those recognized in the trade.

TIES AND VALUES OF CERTAIN FISHERY PRODUCTS LANDED AT BOSTON AND GLOUCESTER, MASS., BY AMERICAN FISHING VESSELS DURING THE CALENDAR YEAR 1915, SHOWN BY FISHING GROUNDS.

Fishing grounds.	Number of trips.	Cod.											
		Large (10 pounds and over).				Market (under 10 and over 2½ pounds).				Scrod (1 to 2½ pounds).			
		Fresh.		Salted.		Fresh.		Salted.		Fresh.		Salted.	
		Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
LANDED AT BOSTON.													
East of 66° west longitude.													
La Have Bank	25	111,030	$5,383			155,543	$3,288			20,000	$261		
Western Bank	36	172,639	5,016			204,735	3,730			20,400	227		
Quereau Bank	2	15,000	400										
Green Bank	1												
Grand Bank	3	4,285	563			4,210	86						
St. Peters Bank	1	3,300	161										
Off Newfoundland	1												
Cape North	1	1,300	36										
Cape Shore	167	415,194	14,881			554,093	11,212			85,393	871		
Gulf of St. Lawrence	5	3,065	121			3,465	89			1,950	22		
St. Anns Bank	2	3,390	102			1,660	33			175	4		
The Gully	1	11,100	161			8,000	187						
Roseway Bank	1	1,000	25										
West of 66° west longitude.													
Browns Bank	282	1,343,950	50,449			2,235,641	45,333			216,774	2,799	695	$14
Georges Bank	507	1,519,392	66,574			2,753,489	64,879			142,071	2,147		
Cashes Bank	33	61,870	3,311			84,660	2,083			8,627	111		
Clark Bank	5	22,295	1,088			60,202	1,368			2,325	21		
Fippenies Bank	10	14,170	755			25,355	626			1,835	23		
Tillies Bank	1	570	48			1,070	43			540	8		
Middle Bank	222	159,055	8,531			208,112	5,666			28,086	423		
Jeffreys Ledge	541	345,375	16,895			457,004	13,147			42,222	712		
Ipswich Bay	50	115,566	5,913			60,260	1,597			3,667	61		
South Channel	516	663,110	10,226			1,883,970	53,989			211,555	3,530		
Nantucket Shoals	62	111,508	5,843			567,113	13,558			47,352	576		
Off Highland Light	9	5,740	355			6,175	235			835	12		
Off Chatham	494	1,365,015	66,469			2,261,528	53,368			226,330	2,758		
Off Race Point	61												
Bay of Fundy	5	7,730	216			13,965	235			340	4		
Seal Island	1	6,830	126			7,045	93			275	2		

South	4													
Shore, general	720	632,203	23,526			370,919	9,066			19,005	285			
Total	3,772	7,181,682	317,507			11,928,214	283,911			1,109,757	14,857	695	14
LANDED AT GLOUCESTER.														
East of 66° west longitude.														
La Have Bank	28	71,930	1,383	30,195	$1,062	203,399	3,009	52,010	$1,702	11,575	87	12,960	285
Western Bank	58	823,735	15,644	122,871	4,350	1,231,960	18,246	107,185	3,590	47,389	364	16,475	443
Quereau Bank	44	369,297	7,417	993,996	35,608	344,580	5,394	650,111	22,403	10,395	78	96,010	2,410
Green Bank	5	45,430	862	15,020	456	900	13	5,240	180				
Grand Bank	42	348,405	6,882	1,021,825	36,002	14,775	232	358,239	11,707			15,450	392
St. Peters Bank	2			12,950	494			2,920	100				
Sambro Bank	2	13,015	247	100	4	15,285	229	260	8			330	7
Burgeo Bank	2	31,200	583	15,460	661	2,150	32	5,290	189				
Bacalieu Bank	3	5,280	100	62,855	2,190	430	6	9,065	294			475	11
Off Newfoundland	46	18,100	344	1,303,721	46,544	6,350	95	162,905	5,309				
Cape North	1			40,360	1,413			13,265	431			150	5
Cape Shore	30	161,477	3,232	55,621	1,936	211,480	2,984	51,700	1,706	21,915	165	6,405	148
Gulf of St. Lawrence	60	2,493,260	49,286	2,160,188	75,697	1,279,370	22,235	1,466,098	47,640	20,585	255	81,270	2,140
St. Anns Bank	8	218,495	4,183	26,640	932	302,345	4,536	24,540	698	17,720	133	800	18
The Gully	14	165,370	3,218	55,690	2,305	39,887	598	15,900	593	150	6	365	9
Labrador Coast	1			13,120	459			1,855	158				
West of 66° west longitude.														
Browns Bank	70	561,276	11,001	32,665	1,240	891,764	14,037	27,845	937	65,881	504	5,376	117
Georges Bank	161	395,993	8,680	686,464	29,068	1,385,379	23,534	1,007,460	36,037	37,539	296	51,756	1,524
Cashes Bank	8	13,540	266			24,805	393			2,950	22		
Fippenies Bank	1												
Middle Bank	75												
Jeffreys Ledge	5	9,950	199			9,090	146			930	7		
Ipswich Bay	6	103,745	2,075			11,045	177			2,005	15		
South Channel	13	5,130	104			115,330	2,010			5,270	39		
Nantucket Shoals	18	82,445	1,635	21,810	872	68,526	1,085	26,265	920	765	6	720	22
Off Race Point	2												
Bay of Fundy	1	1,000	20			3,980	60						
Shore, general	2,766	1,448,779	53,036	8,374	414	63,080	1,072	3,092	123	10,640	80	4,366	131
Total	3,472	7,386,852	170,397	6,679,925	241,707	6,225,910	100,123	3,994,245	134,725	255,709	2,057	292,908	7,662
Grand total	7,244	14,568,534	487,904	6,679,925	241,707	18,154,124	384,034	3,994,245	134,725	1,365,466	16,914	293,603	7,676

QUANTITIES AND VALUES OF CERTAIN FISHERY PRODUCTS LANDED AT BOSTON AND GLOUCESTER, MASS., BY AMERICAN FISHING VESSELS DURING THE CALENDAR YEAR 1915, SHOWN BY FISHING GROUNDS—Continued.

Fishing grounds.	Haddock.						Hake.					
	Large (over 2½ pounds).				Scrod (1 to 2½ pounds).		Large (6 pounds and over).				Small (under 6 pounds).	
	Fresh.		Salted.		Fresh.		Fresh.		Salted.		Fresh.	
	Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
LANDED AT BOSTON.												
East of 66° west longitude.												
La Have Bank	378,625	$12,403			31,242	$523	33,250	$911			67,710	$958
Western Bank	2,160,230	38,661			179,995	1,815	10,000	200			7,045	133
Grand Bank											225	3
St. Peters Bank							2,800	70				
Cape North							3,800	49				
Cape Shore	1,637,452	45,100			92,330	1,129	91,955	3,540	5,000	875	118,975	2,426
Gulf of St. Lawrence	76,360	2,512			3,560	38	1,300	52			1,509	25
St. Anns Bank	25,900	616			100	2	2,885	87			1,580	27
The Gully							4,900	245			2,400	96
Roseway Bank	2,675	47										
West of 66° west longitude.												
Browns Bank	7,438,830	201,325			717,381	9,930	265,403	11,126			358,607	8,701
Georges Bank	3,974,542	103,061			1,869,868	36,671	58,612	1,098			11,060	686
Cashes Bank	38,200	957			2,960	36	162,102	1,754			289,979	4,395
Clark Bank	166,495	3,376			36,075	200	300	6			3,850	50
Fippenies Bank	12,040	309			2,675	30	30,065	1,058			42,910	841
Tillies Bank	2,300	58			1,060	11					4,000	48
Middle Bank	849,883	36,111			302,696	6,425	174,522	6,842			553,474	11,384
Jeffreys Ledge	1,587,032	73,835			552,373	12,707	301,100	12,084			1,350,172	27,153
Ipswich Bay	9,327	341			665	6	3,105	76			8,560	128
South Channel	11,464,217	311,271			6,225,145	76,898	564,687	15,590			1,461,593	22,504
Nantucket Shoals	83,175	2,178			21,220	172	18,950	709			26,735	497
Off Highland Light	37,585	1,717			9,115	203	7,640	257			18,030	295
Off Chatham	5,618,771	161,469			1,634,349	16,524	256,365	7,404			750,515	12,215
Bay of Fundy	17,175	569			3,290	39	79,360	1,996			123,645	1,169
Seal Island	6,970	181			800	8	5,360	107			1,980	23
Shore, general	447,312	18,123			117,470	2,697	767,115	24,929			1,585,752	25,899
Total	36,035,096	1,014,223			11,804,369	166,064	2,842,606	93,190	5,000	75	6,820,297	119,954

LANDED AT GLOUCESTER.												
East of 66° west longitude.												
La Have Bank	230,660	2,408	11,035	$193			964,811	11,530	28,680	453		
Western Bank	987,020	10,189	9,695	183	27,120	184	1,165,560	14,164	45,798	800		
Quereau Bank	108,810	1,091	2,960	52			110,230	1,297	23,633	398		
Green Bank							14,615	183	3,385	60		
Grand Bank			14,075	246			33,975	415	81,640	1,282		
St. Peters Bank							435	5	5,200	91		
Sambro Bank	6,780	71					171,880	2,149				
Burgeo Bank							1,675	17				
Bacalieu Bank									975	17		
Off Newfoundland	100	1					1,135	11				
Cape North			50	1					13,585	238		
Cape Shore	115,250	2,780	5,584	98	520	3	341,890	4,226	29,270	512		
Gulf of St. Lawrence	8,785	91	17,490	352	1,115	20	84,905	937	28,266	474		
St. Anns Bank	12,760	140	30	1			10,730	134	3,375	59		
The Gully	5,230	53					78,240	1,213	7,105	120		
West of 66° west longitude.												
Browns Bank	1,410,412	17,601	5,215	91	12,540	122	506,533	5,849	11,915	207		
Georges Bank	4,835,132	50,480	61,926	1,100	777,965	5,693	69,442	838	2,646	43		
Cashes Bank	12,070	126					244,600	2,467				
Fippenies Bank							13,675	137				
Jeffreys Ledge	1,075	11					78,435	784				
Ipswich Bay	1,725	17					5,885	59				
South Channel	400,245	4,128			235,625	1,639	29,690	367				
Nantucket Shoals	740	8	2,300	40								
Bay of Fundy							46,900	469				
Shore, general	776,216	28,242	234	4	5,690	67	951,171	17,075	10,152	178		
Total	8,913,010	117,437	130,594	2,361	1,060,575	7,728	4,926,412	64,326	295,625	4,932		
Grand total	44,948,106	1,131,660	130,594	2,361	12,864,944	173,792	7,769,018	157,516	300,625	5,007	6,820,297	119,954

QUANTITIES AND VALUES OF CERTAIN FISHERY PRODUCTS LANDED AT BOSTON AND GLOUCESTER, MASS., BY AMERICAN FISHING VESSELS DURING THE CALENDAR YEAR 1915, SHOWN BY FISHING GROUNDS—Continued.

Fishing grounds.	Pollock.				Cusk.				Halibut.			
	Fresh.		Salted.		Fresh.		Salted.		Fresh.		Salted.	
	Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
LANDED AT BOSTON.												
East of 66° west longitude.												
La Have Bank	17,428	$277			76,088	$1,132			16,647	$1,998		
Western Bank	18,680	419			1,995	29			22,504	2,354		
Quereau Bank									8,338	577		
Green Bank									50,000	3,500		
Grand Bank	555	11							60,000	3,760		
St. Peters Bank									30,000	2,400		
Off Newfoundland									55,000	4,400		
Cape North									35,000	3,150		
Cape Shore	51,987	1,204			155,595	2,222			28,743	3,823		
Gulf of St. Lawrence									160,000	10,400		
St. Anns Bank									47	3		
The Gully	185	3			200	3						
Roseway Bank									231	19		
West of 66° west longitude.												
Browns Bank	334,799	7,051			1,371,140	20,386			191,392	28,372		
Georges Bank	484,521	10,775			71,058	1,071			124,512	16,700		
Cashes Bank	22,490	550			190,171	3,079			2,023	261		
Clark Bank	5,355	104			10,135	130			2,406	354		
Fippenies Bank	6,345	161			49,985	854			420	70		
Tillies Bank	1,350	41			600	4						
Middle Bank	253,397	6,441			180,963	3,345			8,687	1,225		
Jeffreys Ledge	998,231	29,054			479,261	8,541			7,771	1,348		
Ipswich Bay	17,700	415			9,100	165			31	4		
South Channel	498,737	12,101			148,307	2,236			86,968	12,504		
Nantucket Shoals	42,275	825			12,195	215			4,173	448		
Off Highland Light	2,645	66			3,100	53			1,176	114		
Off Chatham	1,224,002	26,972			83,362	1,609			26,394	3,551		
Bay of Fundy	3,470	44			49,965	686			120	25		
Seal Island	955	12			14,720	155			584	57		
Shore, general	299,340	7,204			413,741	7,212			7,242	910		
Total	4,284,447	103,733			3,321,681	53,127			930,409	102,327		

LANDED AT GLOUCESTER.												
East of 66° west longitude.												
La Have Bank	28,530	267	5,795	$102	539,944	7,563	5,295	$133	80,412	6,544		
Western Bank	58,525	536	3,635	64	462,095	6,764	14,125	353	244,487	19,626	2,525	$152
Quereau Bank	4,461	45	8,193	144	38,449	569	12,050	300	540,334	40,804	20,609	1,405
Green Bank			90	2	390	6	1,040	26	83,115	5,970	114	10
Grand Bank			7,775	136	1,820	28	3,680	91	672,373	52,750	41,035	2,462
St. Peters Bank	110	1			270	4	30	1	6,200	558	20	2
Sambro Bank	3,455	35			57,605	796						
Burgeo Bank					455	7	137	3	95,092	5,545	400	40
Bacalieu Bank							415	10	31,940	1,930	1,945	117
Off Newfoundland					410	7	85	2	65,688	3,201		
Cape North			280	5			2,010	50	2,500	164	510	31
Cape Shore	9,460	89	1,610	29	308,917	4,385	10,925	269	100,424	9,269		
Gulf of St. Lawrence	70	1	26,972	471	15,595	228	930	21	228,501	11,969	116,621	8,575
St. Anns Bank	1,795	18			550	8						
The Gully	2,835	57	255	4	10,212	151	3,075	76	266,516	22,791	275	21
Labrador Coast											102,151	8,673
West of 66° west longitude.												
Browns Bank	58,820	593	1,950	31	864,602	13,196	8,200	206	64,784	4,522		
Georges Bank	151,978	1,500	173,359	2,995	153,170	2,161	31,150	761	171,397	13,817	305	21
Cashes Bank	8,320	75			167,068	2,417						
Fippenies Bank					7,280	116						
Jeffreys Ledge	870	8			91,250	1,458						
Ipswich Bay	1,385	13										
South Channel	4,880	44			530	7						
Nantucket Shoals	2,945	26	2,850	50								
Bay of Fundy	360	3			940	15						
Shore, general	8,338,067	142,144	1,846	37	192,568	2,990	1,796	45				
Total	8,676,866	145,455	234,640	4,070	2,914,120	42,876	94,943	2,347	2,653,766	199,460	286,510	21,509
Grand total	12,961,313	249,188	234,640	4,070	6,235,801	96,003	94,943	2,347	3,584,175	301,787	286,510	21,509

QUANTITIES AND VALUES OF CERTAIN FISHERY PRODUCTS LANDED AT BOSTON AND GLOUCESTER, MASS., BY AMERICAN FISHING VESSELS DURING THE CALENDAR YEAR 1915, SHOWN BY FISHING GROUNDS—Continued.

Fishing grounds.	Mackerel.											
	Large (over 2¼ pounds).				Medium (1½ to 2¼ pounds).				Small (under 1½ pounds).			
	Fresh.		Salted.		Fresh.		Salted.		Fresh.		Salted.	
	Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
LANDED AT BOSTON.												
East of 66° west longitude.												
Cape Shore	258,790	$26,316	104,037	$4,160	269,592	$20,488	37,763	$1,781	281,792	$14,434	20,243	$810
West of 66° west longitude.												
Georges Bank	125,247	14,750	15,000	1,260	228,690	22,514	1,400	181	166,346	8,408		
Middle Bank	2,399	503	161	26	5,354	454	833	100	62,568	3,104	210	17
Jeffreys Ledge	1,439	304			1,000	100			5,112	433		
Ipswich Bay					1,545	170			8,420	618		
South Channel	3,140	675			8,147	996			20,490	808		
Nantucket Shoals	7,050	1,274			17,711	1,929			57,790	3,089		
Off Chatham	26,531	994	6,000	420	37,811	2,703	36,000	2,460	197,973	10,009	20,000	660
Off Race Point	36,007	2,098			30,123	1,703			574,542	28,882	78,100	1,959
South	11,852	1,422	18,000	856	6,864	961	6,000	285	701	112		
Shore, general	166,433	15,515	2,700	113	244,554	20,697	3,600	180	2,463,370	98,885	146,460	7,603
Total	638,888	63,851	145,898	6,835	851,391	72,715	85,596	4,987	3,839,104	168,782	265,013	11,049
LANDED AT GLOUCESTER.												
East of 66° west longitude.												
Cape Shore			624,700	23,958							2,200	88
Gulf of St. Lawrence			22,800	1,980			23,600	2,210			70,000	5,090
West of 66° west longitude.												
Georges Bank	5,100	391	221,700	15,596	7,600	650						
Middle Bank					126,865	5,365	21,500	1,505	532,921	25,103	981,200	81,506
Nantucket Shoals							20,600	1,157	6,730	220	125,000	6,801
Off Race Point							2,000	140	13,600	945		
Shore, general	51,025	3,479			14,669	782			1,256,681	40,733	962,021	68,161
Total	56,125	3,870	869,200	41,531	149,134	6,797	67,700	5,012	1,809,932	67,001	2,140,421	161,646
Grand total	695,013	67,721	1,015,098	48,369	1,000,525	79,512	153,296	9,999	5,649,036	235,783	2,405,434	172,695

Fishing grounds.	Miscellaneous.				Total.				Grand total.	
	Fresh.		Salted.		Fresh.		Salted.			
	Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
LANDED AT BOSTON.										
East of 66° west longitude.										
La Have Bank	6,796	$464			944,359	$27,598			944,359	$27,598
Western Bank	82,882	8,991			2,881,105	61,605			2,881,105	61,605
Quereau Bank					23,338	977			23,338	977
Green Bank					50,000	3,500			50,000	3,500
Grand Bank	360	31			69,635	4,454			69,635	4,454
St. Peters Bank	508	37			36,608	2,671			36,608	2,671
Off Newfoundland	[a] 600,000	15,900			655,000	20,300			655,000	20,300
Cape North					40,100	3,235			40,100	3,235
Cape Shore	871,924	67,023			4,916,815	214,669	167,043	$6,826	5,083,858	221,495
Gulf of St. Lawrence					251,200	13,259			251,200	13,259
St. Anns Bank					35,737	874			35,737	874
The Gully					26,785	995			26,785	995
Roseway Bank					3,906	91			3,906	91
West of 66° west longitude.										
Browns Bank	188,492	8,670			14,662,409	394,142	695	14	14,663,104	394,156
Georges Bank	1,475,094	142,324			13,034,502	491,661	16,400	1,441	13,050,902	493,102
Cashes Bank	34,858	1,814			900,940	21,349			900,940	21,349
Clark Bank	9,399	235			318,837	6,932			318,837	6,932
Fippenies Bank	6,325	118			192,125	4,845			192,125	4,845
Tillies Bank	650	21			12,140	285			12,140	285
Middle Bank	80,375	1,797			2,869,571	92,251	1,204	143	2,870,775	92,394
Jeffreys Ledge	222,079	5,632			6,353,171	201,945			6,353,171	201,945
Ipswich Bay	1,698	37			269,644	9,531			269,644	9,531
South Channel	1,028,835	34,432			24,298,901	587,760			24,298,901	587,760
Nantucket Shoals	50,361	1,708			1,070,608	33,021			1,070,608	33,021
Off Highland Light	5,483	99			97,524	3,406			97,524	3,406
Off Chatham	465,647	9,310			14,174,593	375,355	62,000	3,540	14,236,593	378,895
Off Race Point	11,949	228			652,621	32,911	78,100	1,959	730,721	34,870
Bay of Fundy	9,300	291			299,360	5,574			299,360	5,574
Seal Island	750	16			46,269	780			46,269	780
South	28,483	1,101			47,900	3,596	24,000	1,141	71,900	4,737
Shore, general	627,096	13,834			8,161,582	268,782	152,760	7,896	8,314,342	276,678
Total	5,809,344	314,113			97,397,285	2,888,354	502,202	22,960	97,899,487	2,911,314

[a] Herring.

Quantities and Values of Certain Fishery Products Landed at Boston and Gloucester, Mass., by American Fishing Vessels During the Calendar Year 1915, Shown by Fishing Grounds—Continued.

Fishing grounds.	Miscellaneous.				Total.				Grand total.	
	Fresh.		Salted.		Fresh.		Salted.			
	Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
LANDED AT GLOUCESTER.										
East of 66° west longitude.										
La Have Bank					2,131,261	$32,791	145,970	$3,930	2,277,231	$36,721
Western Bank					5,047,891	85,717	322,309	9,935	5,370,200	95,652
Quereau Bank	138	$12			1,526,694	56,707	1,807,562	62,720	3,334,256	119,427
Green Bank					144,450	7,034	24,889	734	169,339	7,768
Grand Bank					1,071,348	60,307	1,543,719	52,318	2,615,067	112,625
St. Peters Bank					7,015	568	21,120	688	28,135	1,256
Sambro Bank					268,020	3,527	690	19	268,710	3,546
Burgeo Bank					130,572	6,184	21,287	893	151,859	7,077
Bacalieu Bank					37,650	2,036	75,730	2,639	113,380	4,675
Off Newfoundland	[a] 1,770,150	53,075	[b] 8,931,550	$186,819	1,861,933	56,734	10,398,261	238,674	12,260,194	295,408
Cape North					2,500	164	70,210	2,174	72,710	2,338
Cape Shore	9,936	696			1,281,269	27,829	788,045	28,744	2,069,314	56,573
Gulf of St. Lawrence					4,132,189	85,022	4,014,235	144,650	8,146,424	229,672
St. Anns Bank					564,395	9,152	55,385	1,708	619,780	10,860
The Gully					568,440	28,087	82,665	3,128	651,105	31,215
Labrador Coast							120,126	9,290	120,126	9,290
West of 66° west longitude.										
Browns Bank					4,436,612	67,425	93,166	2,829	4,529,778	70,254
Georges Bank					7,990,695	108,040	2,236,766	87,145	10,227,461	195,185
Cashes Bank					473,353	5,766			473,353	5,766
Fippenies Bank					20,955	253			20,955	253
Middle Bank	5,250	81			665,036	30,549	1,002,700	83,011	1,667,736	113,560
Jeffreys Ledge					191,600	2,613			191,600	2,613
Ipswich Bay	16,100	64			141,890	2,420			141,890	2,420
South Channel					796,700	8,338			796,700	8,338
Nantucket Shoals					162,151	2,980	199,545	9,862	361,696	12,842
Off Race Point					13,600	945	2,000	140	15,600	1,085
Bay of Fundy					53,180	567			53,180	567
Shore, general	2,847,995	30,824			15,956,581	320,524	991,881	69,093	16,948,462	389,617
Total	4,649,569	84,752	8,931,550	186,819	49,677,980	1,012,279	24,018,261	814,324	73,696,241	1,826,603
Grand total	10,458,913	398,865	8,931,550	186,819	147,075,265	3,900,633	24,520,463	837,284	171,595,728	4,737,917

[a] Herring, 1,768,150 pounds, value $53,045; and caplin, dried, 2,000 pounds, value $30.

[b] Herring, 8,930,800 pounds, value $186,783; and salmon, 750 pounds, value $36. Other items under "Miscellaneous" include bluebacks, 707,970 pounds, value $5,686; butterfish, 316,234 pounds, value $7,370; catfish or wolffish, 179,999 pounds, value $3,197; flounders, 652,172 pounds, value $29,884; herring, 1,977,620 pounds, value $20,381; horse mackerel, 671 pounds, value $27; redfish, 88,694 pounds, value $1,134; shad, 421,701 pounds, value $8,602; sharks, 24,418 pounds, value $246; skates, 114,876 pounds, value $1,429; swordfish, 2,238,967 pounds, value $221,559; tilefish, 28,518 pounds, value $1,102; whiting, or silver hake, 4,800 pounds, value $48; porpoise, 200 pounds, value $3; lobster, 6,000 pounds, value $1,080; turtle, 75 pounds, value $3; livers, 1,153,450 pounds, value $16,088; sounds, 100,685 pounds, value $5,947; spawn, 70,213 pounds, value $6,029; and tongues, 1,500 pounds, value $75.

QUANTITIES AND VALUES OF CERTAIN FISHERY PRODUCTS LANDED AT BOSTON AND GLOUCESTER, MASS., BY AMERICAN FISHING VESSELS DURING THE YEAR 1915, SHOWN BY MONTHS.

Month.	Number of trips.	Cod.											
		Large (10 pounds and over).				Market (under 10 and over 2½ pounds).				Scrod (1 to 2½ pounds).			
		Fresh.		Salted.		Fresh.		Salted		Fresh.		Salted.	
		Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
LANDED AT BOSTON.													
January	213	521,945	$18,874	....	....	714,205	$14,510	....	....	97,582	$1,328	....	....
February	213	395,844	19,025	....	....	707,559	16,187	....	....	67,667	1,068	695	$14
March	276	728,602	31,226	....	....	760,754	18,301	....	....	78,454	1,184	....	....
April	224	704,191	19,101	....	....	730,398	12,682	....	....	64,495	759	....	....
May	233	1,029,582	27,288	....	....	1,098,431	19,076	....	....	91,000	930	....	....
June	318	980,456	44,807	....	....	1,728,108	36,084	....	....	135,247	1,414	....	....
July	425	578,066	30,251	....	....	1,391,218	32,322	....	....	93,381	1,154	....	....
August	400	549,639	31,694	....	....	1,504,854	38,797	....	....	94,489	1,290	....	....
September	388	484,308	28,457	....	....	1,198,356	32,746	....	....	124,661	1,518	....	....
October	477	420,340	27,107	....	....	862,061	28,934	....	....	92,022	1,574	....	....
November	357	372,504	22,557	....	....	583,320	18,865	....	....	85,864	1,430	....	....
December	248	416,205	17,120	....	....	648,950	15,407	....	....	84,895	1,208	....	....
Total	3,772	7,181,682	317,507	....	....	11,928,214	283,911	....	....	1,109,757	14,857	695	14
LANDED AT GLOUCESTER.													
January	243	370,890	12,160	127,079	$5,316	221,035	3,105	28,660	$1,197	15,725	118	1,625	49
February	127	89,351	4,131	24,170	915	35,475	591	7,905	304	4,820	36	240	8
March	412	330,730	11,817	84,729	3,910	121,600	2,047	29,605	1,243	6,420	59	725	22
April	562	1,285,754	28,447	368,255	14,625	866,509	12,798	225,665	7,552	34,859	262	1,905	58
May	292	898,669	18,612	219,985	8,901	755,470	11,666	185,983	6,577	53,904	416	5,282	159
June	225	1,311,015	25,137	1,650,650	58,061	702,025	10,809	1,057,747	34,712	22,070	190	52,099	1,567
July	154	834,553	18,556	1,649,330	58,861	1,007,968	18,582	915,270	30,238	31,965	314	64,380	1,680
August	200	790,938	15,345	563,039	20,227	932,505	15,170	423,443	14,445	27,327	209	31,890	794
September	181	775,313	14,318	759,375	27,441	868,886	14,066	600,773	20,813	25,845	203	97,922	2,449
October	224	259,758	5,978	861,459	30,061	415,107	6,801	411,295	13,931	11,815	93	28,696	664
November	453	254,963	9,799	219,177	7,638	152,285	2,280	25,619	863	14,279	107	2,365	49
December	399	184,918	6,097	152,677	5,751	147,045	2,208	82,280	2,850	6,680	50	5,779	163
Total	3,472	7,386,852	170,397	6,679,925	241,707	6,225,910	100,123	3,994,245	134,725	255,709	2,057	292,908	7,662
Grand total	7,244	14,568,534	487,904	6,679,925	241,707	18,154,124	384,034	3,994,245	134,725	1,365,466	16,914	293,603	7,676
Grounds E. of 66° W. long	595	5,536,297	120,563	5,930,612	210,113	4,584,617	76,234	2,929,583	96,708	257,647	2,473	230,690	5,868
Grounds W. of 66° W. long	6,649	9,032,237	367,341	749,313	31,594	13,569,507	307,800	1,064,662	38,017	1,107,819	14,441	62,913	1,808
Landed at Boston in 1914	3,389	8,019,801	325,323	2,720	122	12,304,351	255,541	1,100	44	1,012,441	14,904	....	....
Landed at Gloucester in 1914	4,209	5,843,388	152,554	7,092,272	278,991	8,342,072	165,118	3,953,624	150,288	557,820	4,468	400,036	12,063

Quantities and Values of Certain Fishery Products Landed at Boston and Gloucester, Mass., by American Fishing Vessels During the Year 1915, Shown by Months—Continued.

Month.	Haddock.						Hake.					
	Large (over 2½ pounds).				Scrod (1 to 2½ pounds).		Large (6 pounds and over).				Small (under 6 pounds).	
	Fresh.		Salted.		Fresh.		Fresh.		Salted.		Fresh.	
	Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
LANDED AT BOSTON.												
January	3,289,737	$101,203			662,212	$13,323	69,795	$2,953			238,924	$5,604
February	4,204,753	111,988			1,083,046	21,292	115,642	6,547			309,065	9,358
March	4,689,670	127,744			910,516	15,101	135,692	7,021			431,213	11,434
April	3,053,352	55,756			395,035	3,634	177,061	5,356			449,185	6,627
May	1,676,049	56,784			565,499	6,067	260,345	5,598			472,700	5,505
June	2,604,526	61,593			851,452	6,294	284,855	8,086			625,030	8,840
July	2,476,960	62,628			710,040	6,083	248,530	7,968	5,000	$75	361,335	5,883
August	3,151,393	62,286			1,164,780	7,610	229,809	7,588			376,601	6,576
September	3,564,508	76,693			1,416,061	11,799	321,068	10,667			522,306	9,612
October	3,535,237	95,248			1,774,698	17,464	592,954	14,292			1,592,295	21,539
November	1,777,816	88,310			1,136,057	28,984	261,947	10,941			907,061	17,320
December	2,011,095	83,990			1,134,973	28,413	144,908	6,173			534,582	11,656
Total	36,035,096	1,014,223			11,804,369	166,064	2,842,606	93,190	5,000	75	6,820,297	119,954
LANDED AT GLOUCESTER.												
January	285,240	8,986	1,180	$25	7,490	41	48,160	1,801	1,785	28		
February	204,759	5,471	2,615	45	4,200	62	37,285	1,105	610	9		
March	747,803	14,937	1,735	29	20,000	188	54,668	2,095	625	10		
April	1,802,934	26,003	2,870	51	10,490	58	253,198	3,051	2,635	45		
May	190,297	2,672	11,070	195			593,025	5,930	2,690	48		
June	155,500	1,594	18,674	326	55,455	279	535,290	5,354	56,233	971		
July	943,435	9,613	41,980	791	165,755	1,094	540,580	5,774	70,008	1,081		
August	2,189,675	22,778	26,307	473	277,230	2,097	1,074,576	13,214	50,724	824		
September	1,681,430	17,683	11,845	208	406,355	3,057	1,157,675	14,501	48,708	853		
October	701,715	7,441	8,990	159	113,600	852	389,602	4,826	37,277	644		
November	10,250	108	1,203	22			177,194	4,493	20,080	353		
December	8,972	151	2,125	37			65,159	2,182	4,250	66		
Total	8,913,010	117,437	130,594	2,361	1,060,575	7,728	4,926,412	64,326	295,625	4,932		
Grand total	44,948,106	1,131,660	130,594	2,361	12,864,944	173,792	7,769,018	157,516	300,625	5,007	6,820,297	119,954
Grounds E. of 66° W. long	5,756,637	116,163	60,919	1,126	335,982	3,714	3,133,971	41,435	275,912	4,579	199,435	3,668
Grounds W. of 66° W. long	39,191,469	1,015,497	69,675	1,235	12,528,962	170,078	4,635,047	116,081	24,713	428	6,620,862	116,286
Landed at Boston in 1914	40,984,573	1,089,696			6,235,842	107,211	2,398,923	76,671			5,112,273	92,089
Landed at Gloucester in 1914	10,145,172	179,684	155,522	3,087	233,019	1,478	5,005,412	69,359	222,033	4,218	14,330	166

Month.	Pollock.				Cusk.				Halibut.			
	Fresh.		Salted.		Fresh.		Salted.		Fresh.		Salted.	
	Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
LANDED AT BOSTON.												
January	222,014	$5,505	....	....	213,707	$3,902	....	....	19,683	$4,967	....	....
February	143,595	5,199	....	....	499,862	8,195	....	....	46,330	7,183	....	....
March	211,215	5,586	....	....	501,277	8,187	....	....	109,151	12,647	....	....
April	135,746	2,714	....	....	285,273	4,078	....	....	135,177	13,171	....	....
May	229,943	3,567	....	....	239,308	3,108	....	....	72,318	7,218	....	....
June	599,389	10,596	....	....	142,677	2,178	....	....	239,679	18,509	....	....
July	661,652	13,767	....	....	102,040	1,678	....	....	54,734	6,085	....	....
August	671,647	18,398	....	....	91,705	1,654	....	....	101,307	11,501	....	....
September	553,840	18,468	....	....	251,139	3,841	....	....	61,432	4,795	....	....
October	529,300	14,256	....	....	284,806	4,693	....	....	46,515	6,566	....	....
November	188,206	3,406	....	....	292,505	5,010	....	....	25,363	5,416	....	....
December	137,900	2,271	....	....	417,382	6,603	....	....	18,720	4,269	....	....
Total	4,284,447	103,733	....	....	3,321,681	53,127	....	....	930,409	102,327	....	....
LANDED AT GLOUCESTER.												
January	294,600	8,824	4,065	$61	51,325	907	490	$12	79,546	9,027	230	$23
February	74,488	3,199	200	3	38,827	752	450	10	123,820	9,159	20	2
March	284,541	7,032	2,489	38	103,650	1,551	2,760	69	407,347	34,205	455	46
April	373,147	7,782	3,595	63	434,335	6,893	4,962	124	440,169	29,018	65	7
May	583,211	5,607	25,600	458	410,385	6,269	130	3	136,528	11,272	3,818	382
June	129,498	1,276	56,392	987	150,275	2,255	16,036	398	451,662	24,942	98,621	6,232
July	31,610	310	64,040	1,094	278,117	4,000	12,100	302	255,951	19,596	18,685	1,121
August	68,385	616	36,800	643	400,537	5,649	13,113	327	274,850	20,464	5,200	313
September	73,025	730	16,346	292	688,757	9,644	14,575	365	221,931	14,767	56,926	4,680
October	449,235	5,609	15,462	272	318,513	4,413	18,935	452	143,672	13,617	102,151	8,673
November	4,010,630	64,847	616	11	27,674	378	10,775	270	90,880	10,245	339	30
December	2,304,496	39,623	9,035	148	11,725	165	617	15	27,410	3,148	....	....
Total	8,676,866	145,455	234,640	4,070	2,914,120	42,876	94,943	2,347	2,653,766	199,460	286,510	21,509
Grand total	12,961,313	249,188	234,640	4,070	6,235,801	96,003	94,943	2,347	3,584,175	301,787	286,510	21,509
Grounds E. of 66° W. long	198,076	2,963	54,635	957	1,670,590	23,902	53,797	1,335	2,884,095	217,505	286,205	21,488
Grounds W. of 66° W. long	12,763,237	246,225	180,005	3,113	4,565,211	72,101	41,146	1,012	700,080	84,282	305	21
Landed at Boston in 1914	4,655,089	90,372	....	....	2,668,546	45,970	....	....	826,836	88,441	....	....
Landed at Gloucester in 1914	7,588,457	105,150	211,177	4,214	3,078,507	53,577	111,937	3,232	2,236,164	157,836	316,585	30,073

QUANTITIES AND VALUES OF CERTAIN FISHERY PRODUCTS LANDED AT BOSTON AND GLOUCESTER, MASS., BY AMERICAN FISHING VESSELS DURING THE YEAR 1915, SHOWN BY MONTHS—Continued.

Month.	Mackerel.											
	Large (over 2½ pounds).				Medium (1½ to 2½ pounds).				Small (under 1½ pounds).			
	Fresh.		Salted.		Fresh.		Salted.		Fresh.		Salted.	
	Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
LANDED AT BOSTON.												
May	16,451	$1,771	....	....	11,308	$1,540	....	....	718	$114	....	....
June	302,755	30,028	124,898	$5,155	320,420	22,482	16,996	$2,262	358,565	17,348	20,453	$827
July	199,892	19,313	21,000	1,680	289,855	27,859	38,600	2,725	502,997	25,701	32,400	1,460
August	24,097	2,813	....	....	60,650	5,751	....	....	1,256,253	38,817	2,800	160
September	9,954	1,217	....	....	7,810	750	....	....	809,026	35,679	2,800	280
October	35,797	1,962	....	....	28,699	1,526	....	....	866,313	47,854	206,560	8,322
November	48,228	6,503	....	....	103,567	10,006	....	....	45,232	3,239	....	....
December	1,714	244	....	....	26,082	2,801	....	....	....	....	....	....
Total	638,888	63,851	145,898	6,835	851,391	72,715	85,596	4,987	3,839,104	168,782	265,013	11,049
LANDED AT GLOUCESTER.												
May	4,900	245	....	....	4,100	254	....	....	1,680	134	....	....
June	3,900	222	579,800	21,992	....	....	....	....	137,941	3,709	17,200	845
July	5,280	400	136,800	8,817	7,600	650	19,400	1,070	22,085	725	178,760	9,832
August	....	....	129,800	8,745	3,300	165	22,700	1,592	571,882	19,215	317,771	20,175
September	....	....	....	....	....	....	2,000	140	556,498	18,711	467,557	34,464
October	24,040	1,202	....	....	134,134	5,728	23,600	2,210	519,846	24,507	910,733	75,474
November	18,005	1,801	22,800	1,980	....	....	....	....	....	....	218,400	20,856
Total	56,125	3,870	869,200	41,534	149,134	6,797	67,700	5,012	1,809,932	67,001	2,140,421	161,646
Grand total	695,013	67,721	1,015,098	48,369	1,000,525	79,512	153,296	9,999	5,649,036	235,783	2,405,434	172,695
Grounds E. of 66° W. long	258,790	26,316	751,537	30,098	269,592	20,488	61,363	3,991	281,792	14,431	92,443	5,988
Grounds W. of 66° W. long	436,223	41,405	263,561	18,271	730,933	59,024	91,933	6,008	5,367,244	221,349	2,312,991	166,707
Landed at Boston in 1914	448,311	45,897	15,200	760	505,967	34,139	....	....	2,412,000	92,620	24,000	1,084
Landed at Gloucester in 1914	123,466	6,595	884,800	51,384	167,906	7,910	669,980	54,310	322,715	9,140	1,114,475	50,886

Month.	Miscellaneous.[a]				Total.				Grand total.	
	Fresh.		Salted.		Fresh.		Salted.			
	Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
LANDED AT BOSTON.										
January	529,461	$15,186			6,579,265	$187,655			6,579,265	$187,655
February	329,574	12,117			7,902,937	248,159	695	$14	7,903,632	248,173
March	172,210	5,992			8,728,754	244,423			8,728,754	244,423
April	61,120	1,235			6,191,033	125,113			6,191,033	125,113
May	174,383	2,838			5,941,035	141,404			5,941,035	141,404
June	544,399	31,046			9,717,558	299,305	192,347	8,244	9,909,905	307,549
July	1,200,904	85,702			8,871,604	326,394	97,000	5,910	8,968,604	332,334
August	824,559	61,267			10,101,783	296,072	2,800	160	10,104,583	296,232
September	901,024	54,703			10,225,493	290,945	2,800	280	10,228,293	291,225
October	634,153	30,321			11,295,190	313,336	206,560	8,322	11,501,750	321,658
November	239,604	6,905			6,067,274	228,892			6,067,274	228,892
December	197,953	6,501			5,775,359	186,656			5,775,359	186,656
Total	5,809,344	314,113			97,397,285	2,888,354	502,202	22,960	97,899,487	2,911,314
LANDED AT GLOUCESTER.										
January	1,770,150	53,075	2,495,586	$38,379	3,144,161	98,044	2,660,700	45,090	5,804,861	143,134
February					613,025	24,506	36,210	1,296	649,235	25,802
March					2,076,759	73,931	123,123	5,367	2,199,882	79,298
April	120,000	1,837			5,621,395	116,149	609,952	22,525	6,231,347	138,674
May	543,400	6,332			4,175,569	69,409	454,558	16,723	4,630,127	86,132
June	1,361,730	13,464	1,226	613	5,016,361	89,231	3,601,678	126,704	8,621,039	215,935
July	545,210	4,500			4,670,109	84,114	3,170,753	114,887	7,840,862	199,001
August	244,620	2,050			6,846,825	116,972	1,620,787	68,558	8,467,612	185,530
September	10,638	117			6,466,353	107,797	2,076,027	91,705	8,542,380	199,502
October	18,246	844			3,499,283	81,911	2,418,598	132,540	5,917,881	214,451
November	7,600	587	310,304	6,379	4,763,760	94,645	861,678	38,451	5,625,438	133,096
December	27,975	1,946	6,124,434	141,448	2,781,380	55,570	6,381,197	150,478	9,165,577	206,018
Total	4,649,569	84,752	8,931,550	186,819	49,677,980	1,012,279	24,018,261	814,324	73,696,241	1,826,603
Grand total	10,458,913	398,865	8,931,550	186,819	147,075,265	3,900,633	24,520,463	837,284	171,595,728	4,737,917
Grounds E. of 66° W. long	3,342,694	146,229	8,931,550	186,819	28,710,215	816,087	19,659,246	569,070	48,369,461	1,385,157
Grounds W. of 66° W. long	7,116,219	252,636			118,365,050	3,084,546	4,861,217	268,214	123,226,267	3,352,760
Landed at Boston in 1914	4,646,219	251,003	70,000	2,100	92,231,172	2,609,877	113,020	4,110	92,344,192	2,613,987
Landed at Gloucester in 1914	5,685,365	118,734	5,768,764	106,528	49,343,823	1,031,769	20,901,205	749,274	70,245,028	1,781,043

[a] Includes herring from Newfoundland, 2,368,150 pounds frozen, $68,945, and 8,930,800 pounds salted, $186,783.

The fish landed at Boston and Gloucester, Mass., by American fishing vessels are taken principally from fishing grounds lying off the coast of the United States. In 1915, 71.78 per cent of the quantity and 70.74 per cent of the value of the catch landed by the American fishing fleet at these ports were obtained from these grounds. Of the remainder, 9.41 per cent of the quantity and 9.70 per cent of the value were taken from fishing banks off the coast of Newfoundland, 18.73 per cent of the quantity and 19.35 per cent of the value from grounds off the Canadian Provinces, and less than 1 per cent of both the quantity and value from the coast of Labrador. Newfoundland herring constituted 6.58 per cent of the quantity and 5.39 per cent of the value of the products landed at these ports during the year. The herring were taken on the treaty coasts of Newfoundland, but cod and other species from that region were obtained chiefly from fishing banks on the high seas. All the fish caught by American fishing vessels off the Canadian Provinces were from offshore fishing grounds. The catch from each of these fishing regions is given in detail in the following table:

QUANTITY AND VALUE OF FISH LANDED BY AMERICAN FISHING VESSELS AT BOSTON AND GLOUCESTER, MASS., IN 1915, FROM GROUNDS OFF THE COAST OF THE UNITED STATES, NEWFOUNDLAND, AND CANADIAN PROVINCES.

Species.	United States.		Newfoundland.[a]		Canadian Provinces.		Total.	
	Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
Cod:								
Fresh	23,695,413	$689,361	484,815	$9,962	9,907,896	$189,529	34,088,124	$888,852
Salted	1,876,888	71,419	3,009,390	105,146	6,081,495	207,543	10,967,773	384,108
Haddock:								
Fresh	51,712,661	1,185,386	100	1	6,100,289	120,065	57,813,050	1,305,452
Salted	69,675	1,235	14,075	246	46,844	880	130,594	2,361
Hake:								
Fresh	11,248,569	232,237	54,860	704	3,285,886	44,529	14,589,315	277,470
Salted	24,713	428	91,200	1,450	184,712	3,129	300,625	5,007
Pollock:								
Fresh	12,762,282	246,213	665	12	198,366	2,963	12,961,313	249,188
Salted	180,005	3,113	7,865	138	46,770	819	234,640	4,070
Cusk:								
Fresh	4,550,491	71,946	3,345	52	1,681,965	24,005	6,235,801	96,003
Salted	41,146	1,012	5,387	133	48,410	1,202	94,943	2,347
Halibut:								
Fresh	699,496	84,225	1,149,408	84,014	1,735,271	133,548	3,584,175	301,787
Salted	305	21	145,665	11,304	140,540	10,184	286,510	21,509
Mackerel:								
Fresh	6,534,400	321,778	....	....	810,174	61,238	7,344,574	383,016
Salted	2,668,485	190,986	....	....	905,343	40,077	3,573,828	231,063
Herring:								
Fresh	1,977,620	20,381	2.368,150	68,945	....	....	4,345,770	89,326
Salted	....	....	8,930,800	186,783	....	....	8,930,800	186,783
Swordfish:								
Fresh	1,307,317	145,155	868	68	930,782	76,336	2,238,967	221,559
Miscellaneous:								
Fresh	3,830,532	87,084	2,000	30	41,644	866	3,874,176	87,980
Salted	....	....	750	36	....	....	750	36
Total	123,179,998	3,351,980	16,269,343	469,024	32,146.387	916,913	171,595,728	4,737,917

[a] Includes 17,975 pounds of salted cod, valued at $617, and 102,151 pounds of salted halibut, valued at $8,673, from the Labrador coast.

Cod.—In 1915 there were 33 vessels employed in the salt-bank fishery and 102 in the market fishery landing their fares at Boston and Gloucester. Considerable cod was landed also by vessels operating on shore grounds. There were landed at these ports 45,055,897 pounds of fresh and salted cod, 34,088,124 pounds of the former and 10,967,773 pounds of the latter, valued at $1,272,960, against 47,529,625 pounds in 1914, of which 36,079,873 pounds were fresh and

11,449,752 pounds salted, valued at $1,359,416. There was, therefore, a decrease in the quantity in 1915, as compared with the previous year, of 1,991,749 pounds in the fresh and 481,979 pounds in the salted cod landed.

Several large fares of cod were caught during the season of 1915. A trip amounting to 359,483 pounds taken on trawl lines was landed at Gloucester in July, and one of the dory hand-line fleet brought in 478,365 pounds in September, this being the largest fare taken since 1909, when the same vessel weighed off 479,433 pounds.

Haddock.—The haddock fishery in 1915 was carried on with about the same success as in the previous year. The quantity of haddock landed was 57,943,644 pounds, valued at $1,307,813, an increase over the previous year of 189,516 pounds in quantity and a decrease of $73,343 in value. The catch of haddock by line trawlers landed at Boston amounted to 30,776,733 pounds, of which 16.57 per cent were "scrod." The greater part of the scrod haddock brought in by line trawlers came from the inshore grounds, the offshore banks supplying a greater proportion of large haddock. On the inshore grounds the amount of scrod haddock taken varied from 18 to 22 per cent of the total catch and on the offshore grounds from 2 to 8 per cent.

Pollock.—The pollock fishery, which in recent years has supported a considerable fleet of small craft employing purse seines as a means of capture, was carried on with greater success than in 1914. The total catch of pollock landed at Boston and Gloucester, including those taken on hand and trawl lines and in gill nets, was 13,195,953 pounds, having a value of $253,258, an increase of 741,230 pounds in quantity and $53,522 in value compared with 1914. As in previous years, most of the pollock landed by purse seiners and gill netters were caught in spring and fall months.

Halibut.—In the last few years the halibut fishery on the Atlantic coast has fluctuated but little. The yield of fresh and salted halibut in 1915 was 3,870,685 pounds, 3,584,175 pounds of the former and 286,510 pounds of the latter, valued at $323,296, an increase of 491,100 pounds and $46,946 over 1914. The largest catches of this species were made on Georges, Browns, La Have, Quereau, Western, and Grand Banks, the last-mentioned bank supplying the greatest amount. The fishery was conducted throughout the year, but the bulk of the catch was taken during the early spring and summer months. The vessels regularly employed in this fishery numbered 33 sail, although many of the cod hand-line and trawl-line fishermen frequently caught halibut in considerable quantities. The usual activity was displayed in this fishery in the spring of 1916. At the end of May the fleet engaged numbered 26 vessels, and a considerable number of fairly large fares were landed.

The otter-trawl fishery.—This method of fishing, as in 1914, was carried on by 12 steamers. With the exception of several trips landed at Portland and an occasional trip disposed of at Gloucester during such times when there was a glut of fresh haddock in the market, the bulk of fish caught by otter trawlers was landed at Boston. The year's catch was 21,116,300 pounds, representing 380 trips, an increase of 8 trips. There were landed from Georges 105 trips, from South Channel 248, Western Bank 26, and Browns Bank 1. As in the previous year, Western Bank was resorted to in March, April, and May, when haddock were less plentiful on Georges and in the South Channel than during the winter months. Of the total quantity of fish landed at Boston by this class of vessels, 17,062,732 pounds were haddock, of which 39.28 per cent were "scrod." The great disparity in the landings of small fish by this method as compared with line trawls is confined wholly to haddock, the large and small fish of other species caught by the two methods, such as cod, cusk, and hake, being more equally divided.

On July 20, 1915, the otter trawler *East Hampton* landed at Gloucester 310,000 pounds of fresh fish, most of which were haddock. The largest trip previously brought in was 300,000 pounds, caught by the otter trawler *Long Island.* These were the largest fares ever taken by American otter trawlers.

Mackerel.—The amount of salted mackerel taken in 1915 was 19,691 barrels, exceeding the catch of the previous year by 4,170 barrels. The catch off the New England coast was 15,480 barrels and on the Cape Shore, including a few fares from the Gulf of St. Lawrence, 4,211 barrels, or 750 barrels less than was taken in those regions in 1914. The total catch of fresh mackerel by the fleet was 71,564 barrels, compared with 68,582 barrels the previous season. The number of fresh mackerel taken on the Cape Shore was 781,000, which exceeded the catch of 1914 by over 200,000 fish. In the fall of 1915 several vessels of the seining fleet made phenomenal catches in Massachusetts Bay, one vessel making a stock of $6,548 in three weeks, at which time it was reported that a much larger body of mackerel was on the coast than had been observed for several years.

The mackerel fishery in the spring of 1916 showed a marked improvement over that of 1915, the catch up to May 15 being nearly double the amount recorded the previous season on the same date. Three vessels of the seining fleet stocked over $9,000 each and one $11,246, the last-mentioned stock being $2,361 more than the highest made by a single vessel to the end of May, 1915. There were engaged in the southern mackerel fishery 24 seiners and 58 netters. Fifteen of the latter sailed from Gloucester and 43 from other ports. The number of seiners was one less than in 1915, but there was an increase of 41 netters. A portion of the seining fleet sailed on March 24, but none of the netters sailed until April 25. The first mackerel of the season of 1916, amounting to 7 barrels, were caught on April 5 about 80 miles east by south from Cape Henlopen, or practically in the same locality where the first fish were encountered the previous season. The fish were landed at Lewes, Del., from which place they were shipped to New York by rail. Other small trips were caught in the same region within a few days, but the first fare of any considerable size was landed at New York on April 26, one vessel bringing in 41,800 fish, followed the next day by the arrival of 6 vessels with trips ranging from 6,000 to 40,000 fish. From this time until the middle of May the supply of mackerel in the New York market was about equal to the demand. For the week ended May 3 the amount of fresh mackerel landed was 553,000 in number, mostly large and medium, compared with 268,576 fish last year, which were mostly small. Many of the large mackerel in April sold for 40 cents each. The average price ranged from 12 to 20 cents for large and medium, while tinkers brought from 3 to 6 cents a pound.

On May 31 there were 1,200 mackerel landed at Boston, the first fare of the season. Four vessels of the seining fleet sailed for the

Cape Shore May 25, and on June 6 the number had increased to 24 sail. The first mackerel of the season from this region were landed at Boston on June 9, the trip consisting of 10,000 large and 35,000 medium fresh mackerel and 170 barrels salted. On June 10 there were 3 other arrivals from the Cape Shore with fares taken off Halifax and Liverpool, the combined catch amounting to 125,000 of mixed fresh mackerel and 230 barrels salted. At that time there were 15 other seiners on the ground, all of which captured schools of mackerel. Mackerel were reported plentiful on the Cape Shore until June 21, and many large trips were taken. The highest stock made by a single vessel in this region was $6,343, which is the largest recorded for one trip in recent years. Fish were also abundant during the month on grounds in the vicinity of No Mans Land, the entire fleet of seiners and netters fishing in that locality doing well.

Swordfish.—This species was more plentiful in 1915 than in the previous year, and 2,238,967 pounds, having a value of $221,559, were landed at Boston and Gloucester, an increase of 739,123 pounds and $43,860 over 1914. There were 42 vessels engaged in the fishery, operating mostly on the more eastern grounds, although some good catches were made on Georges, Nantucket Shoals, and adjacent grounds. On July 20, 17 vessels landed at the Boston Fish Pier 1,126 swordfish that had been taken on Georges. This was probably the greatest number of swordfish ever landed at an American port in one day.

Winter gill-net fishery.—The winter gill-net fishery practically ceased at the end of May. A fleet of 30 vessels was employed at Gloucester during the season, and there were a few vessels that operated out of other ports. Fishing was conducted on the inshore grounds along the New England coast from Cape Ann to Portland. As in previous years, the principal species taken by this method were cod, haddock, and pollock. While the fleet as a whole did not meet with the same degree of success as in some years past, the fishery was an improvement over the previous season. Several good stocks were made, one vessel making $30,000, with a share of $1,500 to each member of the crew. This was probably the highest record ever attained in one season by a vessel engaged in the winter gill-net fishery.

Italian fishing boats.—The number of Italian motor boats fishing out of Boston and landing their catch at that port has increased in the last few years. At the present time there are approximately 200 boats of this class engaged in the shore fisheries, all of which are too small for registration, being under 5 tons, and in consequence their catch is not recorded in the Boston and Gloucester bulletins. These boats take a variety of species and operate several kinds of fishing gear, namely, trawl lines, hand lines, and drag seines.

Some ten years ago the catch of this class of boats consisted largely of flounders, but in the last few years greater efforts have been made to capture other species of ground fish, such as cod, haddock, cusk, hake, etc. Mackerel also have been taken to some extent. In 1915 the Italian catch landed at Boston, and sold through the New England Fish Exchange, was over 3,500,000 pounds of fish, valued at $135,000. The catch consisted largely of cod, haddock, pollock, hake, and cusk. The amount of flounders landed was about 36,000 pounds.

PACIFIC HALIBUT AND COD FISHERIES.

The halibut banks off Oregon and Washington, recently surveyed by the steamer *Albatross,* were resorted to during the month of June, 1915, by a portion of the halibut fleet sailing out of Seattle, from which grounds 26 trips of halibut were taken in that month, comprising 1,318,000 pounds, valued at $64,623. As halibut were scarce on these grounds in the summer months, the remainder of the catch of that species landed at Seattle from June to December was taken from banks farther north, extending from Flattery Bank, off the coast of Washington, to Portlock Bank, Alaska. This amounted to 13,876,970 pounds, having a market value of $820,585. In the first half of the calendar year 1916, 25 fares were brought from the banks off Oregon and Washington, amounting to 931,692 pounds, valued at $77,819. The total quantity of halibut landed at Seattle during that period, including the catch from banks farther north, was 7,391,384 pounds, valued at $608,947, taken in 274 trips.

According to the Pacific Fisherman, the total catch of halibut on the Pacific coast by American vessels in 1915 was 50,238,390 pounds, of which 33,133,313 pounds were landed at Seattle, 11,323,500 pounds in Canadian ports, and 5,781,577 pounds in Alaska, against 48,902,575 pounds the preceding year, a gain of 1,335,815 pounds. The American fleet engaged in this fishery consisted of 100 sail, known as "independent" and "company" vessels, there being 89 of the former and 11 of the latter, ranging in size from 7 to 196 tons. The Canadian fleet comprised 27 vessels, the catch of which amounted to 16,031,265 pounds, an increase of 1,074,465 pounds over 1914.

The fleet employed in the cod fishery of the Pacific coast numbered 20 sail, including 2 vessels engaged in transporting cured fish from the shore stations in Alaska. Three regions were represented in the fishery—San Francisco by 9 vessels, Puget Sound by 8 vessels, and Alaska by 3 vessels. One of the Alaskan vessels was lost in the early part of the season. The fleet met with very good success and made a catch of 3,798,071 fish, equivalent to 19,092,319 pounds, the fish being reckoned at 4½ pounds each. The catch fell short of that of 1914 by 122,831 fish, or 552,739 pounds.

The work of collecting statistics of the quantity and value of fishery products landed at Seattle, Wash., by American fishing vessels was reestablished in June, 1915, by the appointment of a local agent at that port. The products landed from July, 1915, to June, 1916, comprised 513 trips, including 19,580,163 pounds of halibut, valued at $1,330,609, and 948,024 pounds of other species, valued at $23,285; a total of 20,528,187 pounds, valued at $1,353,894. The monthly receipts by species are shown in the following table:

QUANTITIES AND VALUES OF CERTAIN FISHERY PRODUCTS LANDED AT SEATTLE, WASH., BY AMERICAN FISHING VESSELS DURING THE FISCAL YEAR 1916.

Month.	Number of trips.	Halibut.		Cod.		Black cod.		Ling cod.		Rock cod.		Total.	
		Pounds.	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*	*Pounds.*	*Value.*
1915.													
July	61	2,700,430	$152,859			39,300	$855					2,739,730	$153,714
August	36	1,698,288	92,253	645	$10	8,860	217			1,000	$15	1,708,793	92,495
September	53	2,172,000	132,496	1,312	20	332,000	8,300					2,505,312	140,816
October	31	1,644,792	103,952			130,545	3,164			10,000	250	1,785,337	107,366
November	30	2,312,527	147,994			17,000	425					2,329,527	148,419
December	28	1,660,742	92,108			26,000	650					1,686,742	92,758
1916.													
January	8	923,055	68,049			18,000	360					941,055	68,409
February	7	706,931	47,669			16,232	443					723,163	48,112
March	31	815,209	82,226	60	1	16,175	484					831,444	82,711
April	61	1,207,372	130,438			10,566	318	6,006	$120	11,413	293	1,235,357	131,169
May	89	2,024,105	129,672			84,955	2,124					2,109,060	131,796
June	78	1,714,712	150,893			200,233	4,883	11,732	230	5,990	123	1,932,667	156,129
Total	513	[a] 19,580,163	1,330,609	2,017	31	899,866	22,223	17,738	350	28,403	681	20,528,187	1,353,894

[a] Includes 5,000 pounds of salt halibut, worth $125, landed in August. The remainder of the catch was sold fresh.

PROMOTION OF AMERICAN CAVIAR.

One of the most valuable of all fishery products is caviar, which is prepared from the roe of sturgeon primarily, but also from that of the paddlefish of the Mississippi Valley, and sometimes, under appropriate descriptive names, from the eggs of carp, whitefish, and other species. The product has always been imported extensively, while it is known that suitable material in this country is often wasted through ignorance of the fishermen as to the methods of preservation to employ. After a suitable investigation of the matter, the Bureau issued an economic circular describing in simple language the methods which may be efficiently employed by any fisherman. The paper had the twofold object of preventing unnecessary waste through ignorance or neglect and of awakening a more effective interest in the protection of the sturgeon and the paddlefish.

INTRODUCTION OF NEW AQUATIC FOODS.

One of the most useful ways in which the Bureau of Fisheries can serve the fishermen and the general fish-eating public is to make known new sources of aquatic foods and to assist in establishing fisheries and markets therefor. The conspicuous success achieved in the case of the sea mussel has been referred to in previous reports. This excellent, abundant, accessible, cheap, and widely distributed shellfish, formerly neglected, has now become a staple in certain important markets. Various other water products of great prospective value, but now largely unutilized, should be exploited as speedily as possible, but the limited funds and facilities at the disposal of the Bureau for such work make it impossible to conduct an active campaign with more than one or two such articles at one time. In the fiscal year 1916 one hitherto neglected fish has been given a permanent and important place in the fisheries and fish trade by the Bureau's efforts, and a campaign of great prospective consequence has been inaugurated with reference to several others.

In October, 1915, the Bureau undertook to popularize the tilefish in the belief that it is a fish of great prospective food value. Its utilization had been advocated years ago, but the efforts to introduce it were not sufficiently comprehensive or sustained to bring success, and the fish in reality came into some disrepute because of the failures that attended the attempts to give it a commercial status. The task confronting the Bureau was to induce fishermen to catch the fish, dealers to handle the fish, and the public to consume the fish, and to bring all this about simultaneously. The effective methods pursued made it possible for the Government to withdraw from the campaign within one month and to intrust future developments to private enterprise.

The essential feature of the exploit was the chartering of a regular fishing vessel with practical fishermen as its crew. The auxiliary schooner *Stranger*, of Gloucester, carrying 12 men, was the vessel selected for the purpose. The Bureau had guaranteed the *Stranger* $1,500 for one month's service, but in 27 days she caught 38,383 pounds of tilefish, which, after deducting commissions, sold for $2,036.63; and not only was the Bureau at no expense whatever for the fishing operations, but the proceeds, taking no account of several thousand pounds gratuitously distributed for advertising purposes, yielded a substantial bonus to the crew over their regular remuneration.

When the wholesale trade of New York was requested to cooperate in the proposed campaign, the unfortunate past stood in the way of immediate acquiescence. "There is no demand for the fish," said the dealers, but the Bureau explained that getting the fish and creating a demand were its part of the work and that all that was desired of the trade was a cheerful willingness to handle the fish to satisfy such demand as might develop. When the first fare was landed in New York on October 22, four or five dealers in Fulton Market rather reluctantly agreed to handle the fish, some of which were given away and the remainder sold for 5 cents per pound. When the fourth trip arrived but 20 days later, 15 dealers were competing for the fish, which sold for 7 cents. In the interval a demand had arisen which no large wholesale or commission house could afford to ignore. This demand was created solely by an advertising campaign which kept the fish constantly before the public and concentrated attention on its points of interest and excellence. Newspapers were furnished items recounting the unusual history of the fish—its discovery, practical extermination, and reappearance; incidents in the campaign were exploited; fish were more or less conspicuously supplied to prominent persons; leading hotels and restaurants were induced to give the tilefish prominence on their menus; a great motion-picture company placed a camera man on the *Stranger* and exhibited motion pictures of the fishery as a feature of its weekly news reel; and the Bureau's own advertising matter was distributed freely.

The propaganda conducted in behalf of this fishery covered practically the entire field. The fishing grounds were found and pointed out to fishermen; a regular commercial fishing vessel was engaged to demonstrate the financial yield of this fishery under regular industrial conditions; the wholesale trade was enlisted in the distribution of the fish; the retailer was furnished with attractive display advertising matter calling his customers' attention to the fact that the fish was on sale; and the consumer was told about the tilefish and how to cook it, and his curiosity and interest were stimulated to the point where he wished to try it and asked his dealer for it. As a consequence, when the Bureau ceased its fishing operations, other vessels were already at work, and within 10 days of the landing of the last fare by the *Stranger* eight schooners were either in the fishery or about to enter it and by the end of the month had landed in New York about 156,000 pounds of tilefish.

The progress of this fishery has far exceeded expectations. While New York continues to be the center of the industry, Boston, Atlantic City, Newport, and other places have become practically interested by putting vessels in the fishery. At the end of June, 1916, the New York fleet consisted of 13 vessels making regular trips to the fishing grounds, although earlier in the season a number of other vessels were engaged. The catch has varied from month to month, but has shown a general upward trend as increased fares were brought in to meet the growing demand, and the yield in June exceeded that of any preceding month, aggregating over 1,221,000 pounds landed at New York in 28 fares. A new record was made in July, 1916, when 2,200,000 pounds were landed at New York, 230,000 at Boston, and various minor fares at other ports.

By the end of the fiscal year 1916, when the fishery was only eight months old, upward of 4,388,500 pounds of tilefish, which brought the fishermen over $210,000, were caught and sold. The monthly receipts at New York were as follows:

Month.	Pounds.	Month.	Pounds.
November, 1915	156,500	April, 1916	626,000
December, 1915	170,200	May, 1916	620,000
January, 1916	398,000	June, 1916	1,221,000
February, 1916	469,000		
March, 1916	615,000	Total	4,275,700

The tilefish grounds extend along the edge of the continental shelf from a point south of Nantucket to an area east of Atlantic City. Few fish have been taken in depths over 100 fathoms, and the best

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fish are in from 60 to 65 fathoms of water. Ti as to the kind and quality of bait offered them. While squid, bluebacks, menhaden, clams, etc., are very acceptable, they will bite freely on inferior kinds of bait, making the bait question comparatively easy to solve.

The fishery has proved a great deal more remunerative than was at first expected by most fishermen and is now considered by them as being well established. The prices received by the fishermen have at times been as high as 7 cents a pound and as low as 1½ cents, the average being about 5 cents. The fish bears shipment perhaps better than any other staple fish of the Atlantic coast and now reaches consumers all over the eastern half of the country. Some large shipments have gone as far west as Kansas City. The catch in recent months has been at the rate of 20,000,000 pounds per annum.

Following long consideration and much discussion, the present Congress has passed an act, approved June 21, 1916, which provides a way of alleviating the losses sustained by the fishermen, more especially those of the Atlantic coast, from the ravages of dogfishes. The act carries an appropriation of $25,000 to enable the Commissioner of Fisheries to conduct investigations and experiments to this end, and the method of procedure, as recommended by the Bureau and understood by Congress, is to make the dogfishes useful. Mistaken economic and biological conceptions as to the possibility of bringing about the extermination of dogfishes have been abandoned, and all persons now interested in the welfare of the fishermen and the advancement of the fisheries are united in the efforts that will be made, under authority of law, to convert an injurious and hitherto useless article into a valuable asset. While the dogfishes and other sharks yield by-products, such as oil, gelatin, and leather, of undoubted economic importance, their principal utility comes through their known value as food. The task before the Bureau is to overcome the deep-seated prejudice that exists against these fishes and to determine the ways and means for creating a demand for fresh and preserved dogfish that will react on the fishermen and enable them to market their catch at a profit.

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